International Air Travel, Tourism and Freight Opportunity Study

InterVISTAS

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The completion of this study would not have been possible without the constructive cooperation of all the tourism operators, industry associations, shippers, carriers, community and government representatives who gave substantial time to this project.

Development of the NWT air market is critical to our long term development. This study provides an expert review of options for doing this. However, its primary purpose is to elicit northern comment and discussion. If you want to provide your viewpoint, please forward your comments directly to the Department of Industry, Tourism and Investment, or the Department of Transportation, Government of the Northwest Territories. The primary email address is dan_westman@gov.nt.ca, or fax 867-873-0434.

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1.0 Executive Summary

The Northwest Territories has considerable tourism attractions such as Northern Lights viewing, winter activities such as dogsledding, snowshoeing, hunting, fishing and ecological touring. However, the NWT is not alone in these destination attractions and faces stiff competition from communities such as Whitehorse, Fairbanks, and Anchorage, as well as with other communities such as Prince George, Northern BC and Northern Saskatchewan for some of these activities including hunting, fishing, touring and ecotourism.

Tourism is well recognized by governments and airports throughout Canada and the world as being a major contributor to local and regional economies, which has resulted in very aggressive marketing and infrastructure development in order to capture the ever growing tourism markets. For instance, six airports in British Columbia and Alberta are aggressively going after long-haul European charter services with three of them recently extending their runways to accommodate aircraft take-offs for non-stop flights to Europe.

In the process of attracting airlines to initiate new services, airports and tourism organizations are prepared to provide financial incentives in terms of revenue guarantees, airport start-up cost recovery, landing and terminal fee concessions and marketing efforts and budgets. This is offered for the high risk start-up stage of a new air service as the awareness of the new flight is being developed. The trend for such support started six or seven years ago and now it has become common place as the "ask" by the airlines for what the community is willing to offer. This has become particularly important as airline financial returns have become increasingly fragile because of rising fuel prices.

In terms of developments in the aviation industry, the rising price of fuel is now the key issue of concern to the airlines. At $95 per barrel of crude oil, many airlines were having trouble in considering any new air services, at $105 per barrel they started examining their whole network, at $115/barrel they are starting to park aircraft. A one dollar increase in the price of a barrel of oil translates to about $82 million in annual additional costs to an airline like American Airlines. When the price of oil goes from $105 to $120, American Airlines is looking at a cost increase of $1.224 billion. The consequences are severe. Some of the airlines that have gone into bankruptcy or bankruptcy protection within the last month alone include: Zoom, ATA, EOS, Aloha, Skybus, Frontier and OASIS. Furthermore, major USA network carriers are having serious merger discussions such as Delta and Northwest, as well as Continental and US Airways. It is not the best environment for the development of new air services.

Stakeholder interviews and research has determined that there is not a great deal of air freight leaving the area other than diamond exports that do not require very much airlift to move to their final destination. Inbound cargo to the region comes in through the most economical means possible which is trucking. Any high priority, rush cargo can be carried in the belly of combination aircraft such as offered by First Air and Canadian North.

The transhipment concept is a means of developing a business that can make a major contribution to the local economy. The key ingredients to make this concept of interest to airlines include:

- Low airport costs
- Lower than normal fuel costs
- An aircraft technical reason such as YZF being at the range limit for some aircraft types on certain routings
- Critical mass of air services offering cargo connection opportunities of a hub airport.
- Foreign trade zone

Developing a cargo transhipment center requires considerable work, diligent marketing efforts, major financial investment and the above ingredients as so described. Many airports are attempting to establish a transhipment centre to varying degrees of success. For instance, Calgary, which has all-cargo flights for domestic, transborder, Europe and Asia markets, has the potential for transhipment of goods through YYC. Edmonton on the other hand, while being a major cargo centre for northern transportation, has not been able to develop as an international transhipment centre with very limited all-cargo airline operations. For Yellowknife, with limited local cargo traffic and none of the other essential transhipment centre ingredients the challenge of developing an international transhipment centre is overwhelming.

A comparison of airfare levels between Europe/Asia and Yellowknife versus Fairbank/Anchorage of scheduled airlines indicates that Yellowknife prices are inline with these airports other than in the summer as indicated in the following table:

	Summer	Winter
Japan	YZF yields are lower than Alaska	YZF yields are the same as Alaska
Germany	YZF yields are considerably higher than Anchorage	YZF yields are the same as Alaska

Charter prices of course give Alaska an advantage over the higher schedule service fares at Yellowknife.

A regular meeting and convention facility would provide additional demand for air travel and help fill empty seats on current air services. The smaller sized conventions in the 200-600 person range would appear to be fully compatible with hotel and airline seat availability. Such sized conventions may be of lesser interest to cities like Edmonton and could be a good focus for the NWT. A review of the costs and benefits of a new convention facility is beyond the scope of this study.

A runway extension is not required for non-stop Europe flight landings at Yellowknife nor for split charter take-offs to Europe via another point in Canada such as at Edmonton (YEG) or Calgary (YYC). However, a runway extension is needed if there are to be non-stop flight operations from Yellowknife to Europe. At this stage with the uncertainly of the true size of air travel demand for Europe or Asia, the start-up period for the first several years of a new operation would have to be combined with a partner airport such as Edmonton or Calgary. A means of developing international markets so that they justify a full flight load for non-stop services, in both directions, is to start with a split (double drop) charter service.

At this point local stakeholders would prefer to minimize the risk to see airport expenditures on upgrades spent on smaller airports throughout the NWT which are at the other end of a Yellowknife flight than on an YZF runway extension. This issue is not within the scope of this study and therefore this report has simply a recorded what some stakeholders have raised, not made any value judgement on the question of runway extension feasibility. Such review of airport capital expenditures is the subject of a separate study involving all planning aspects of the airport.

The current size of the Yellowknife passenger air travel market, outside of the region, is not particularly large but review of visitor statistics relative to what is currently being carried by airlines suggests that there are some air service opportunities that are worth pursuing.

In terms of new Yellowknife services there would appear to be some additional domestic schedule service opportunities, international service potential for Japan and Germany and lower probability transborder (USA) services.

2.0 Background Information

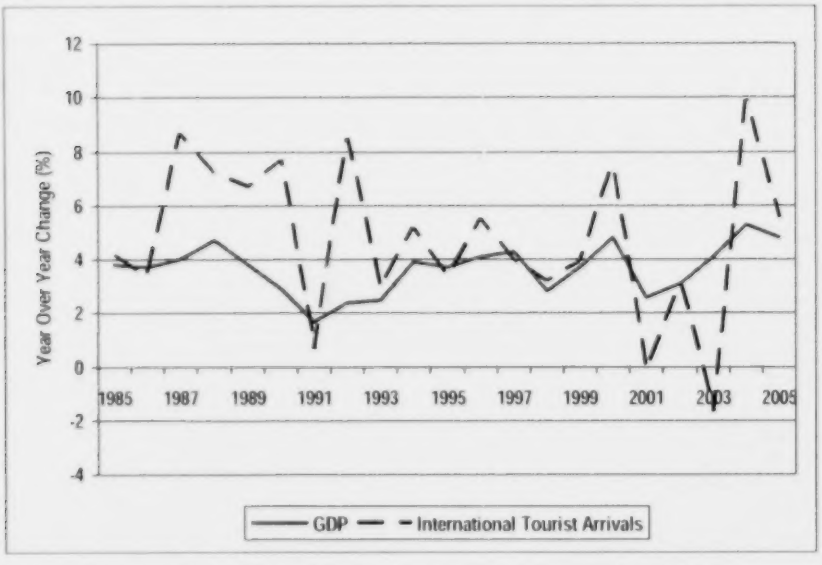
2.1 Tourism Industry Trends

2.1.1 Global Trends

Over the past several years, the global tourism industry has been challenged by a series of market shocks including economic downturn, terrorist attacks, war, natural disasters, and health issues. Although faced with the aforementioned challenges, the global tourism industry continues to demonstrate positive and robust growth. Additionally, as transportation networks expand and world income rises, making travel more accessible than ever before, the tourism sector plays an ever increasing part of the global economy.

Specifically, tourism growth as measured by international tourist arrivals has outpaced global economic growth over the last 20 years. Although the growth rate of the tourism industry is more volatile than GDP (as shown in Figure 1), most of this volatility is the result of extra-ordinary events (e.g., Iraq war, 9/11, SARS). In general, history demonstrates that the industry has been able to recover fully from these kinds of events.

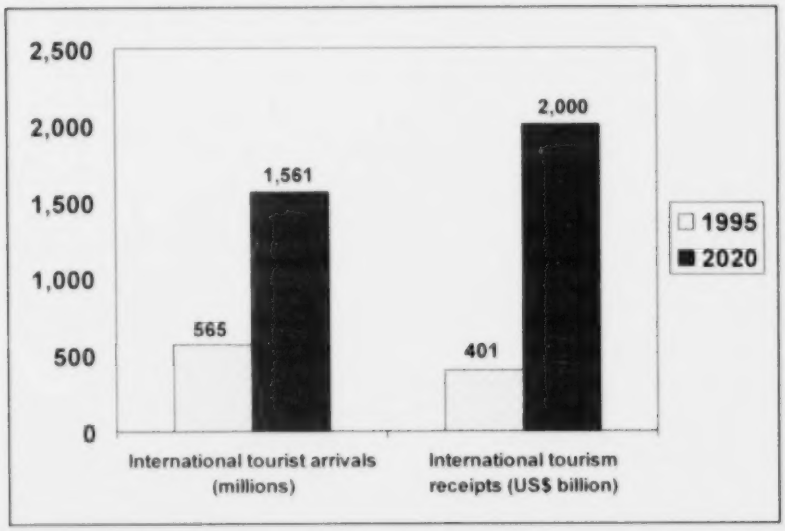
Figure 1: International Tourist Arrivals and World Economic Growth



Source: International Monetary Fund (IMF), World Tourism Organisation (UNWTO).

The World Tourism Organisation (UNWTO) expects that international tourist arrivals will grow at an annual rate of 4.1%, reaching nearly 1.6 billion by 2020. Additionally, the UNWTO predicts that international tourism receipts will rise to a level of approximately US$2.0 trillion by 2020. Recent 2005 and 2006 data continues to support the UNWTO forecast of an average 4.1% per year increase in tourist arrivals.

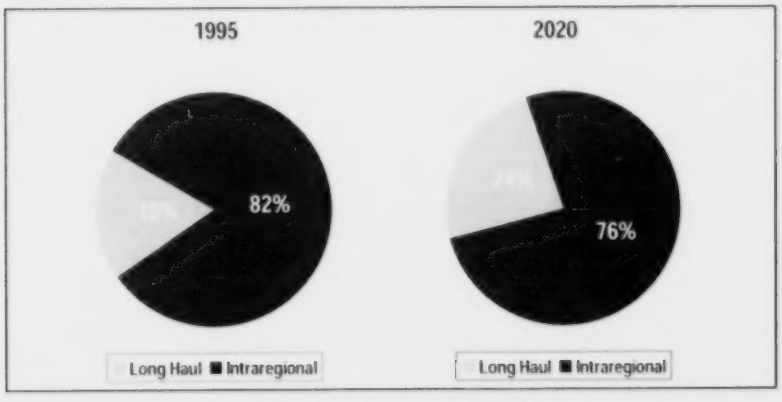
Figure 2: World Tourism Forecasts - 2020



Source: United Nations World Tourism Organizations (UNWTO)

Over the recent years, one emerging tourism trend has been the increase in long-haul travel relative to short haul intra-regional travel. By 2020, the UNWTO expects long-haul travel to make up 24% of total international travel, up from 18% in 1995. In addition, as extended leisure time becomes more difficult to find, travelers are taking more frequent, shorter duration trips rather than long trips.

Figure 3: International Travel by Type

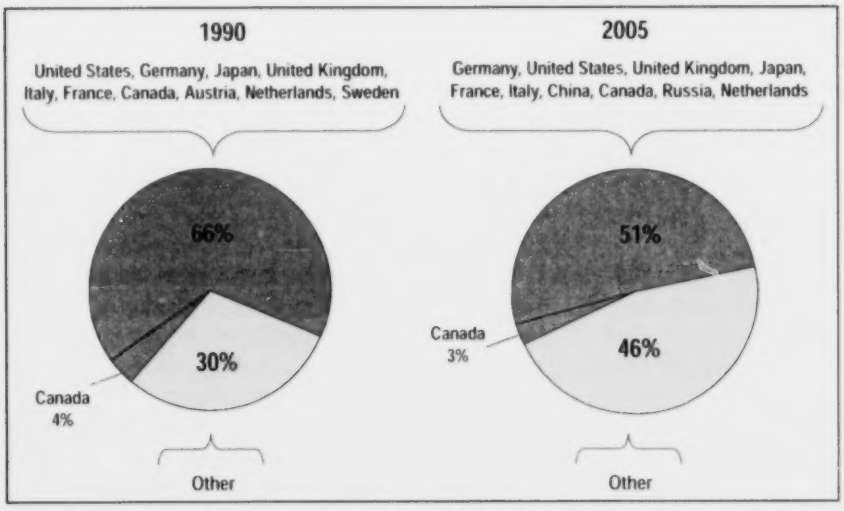


Source: United Nations World Tourism Organizations (UNWTO)

Over the past 15 years, there has been a dynamic shift and diversification of tourism source markets and destination choice. Drivers of these changes include economic growth, liberalisation of air policy and outbound travel from countries with emerging economies, especially amongst those showing strong growth (particularly China, Brazil, Russia and India), and continued globalisation.

As shown in Figure 4 below, the share of international tourism expenditures accounted for by the top 10 tourism source markets has dropped from 70% in 1990 to 54% in 2005. This means that the source of tourism expenditures has become more spread out amongst different markets. In addition, there has been a change in the tourism source markets that make up the top 10-with China and Russia emerging in 2005 and Austria and Sweden dropping out.

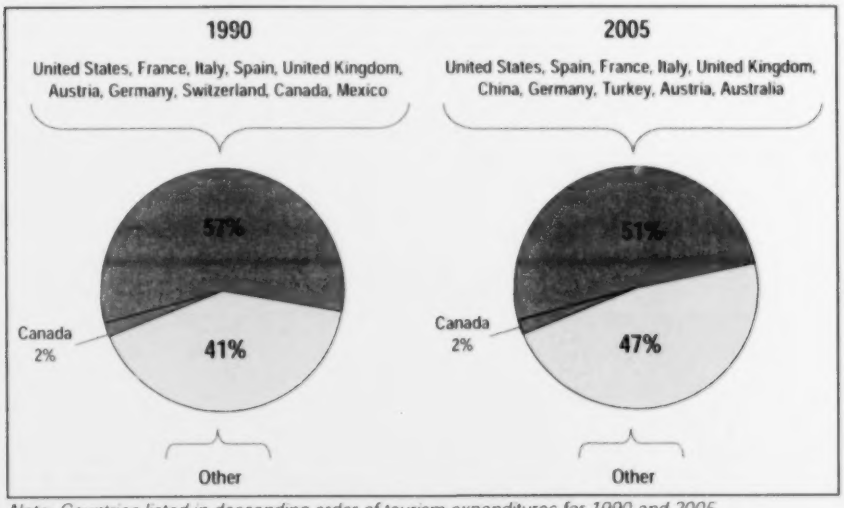
Figure 4: Top Ten Counties in Terms of Tourism Expenditures (1990 & 2005)



Note: Countries listed in descending order of tourism expenditures for 1990 and 2005.
Source: World Tourism Organisation (UNWTO).

Similarly, the share of international tourism receipts accounted for by the top 10 destinations has dropped from 59% in 1990 to 53% in 2005 (shown in Figure 5). This is an indication that tourism receipts are being divided amongst many more destinations, a sign of increasing competition. During this time, the relative popularity of destinations has also shifted and changed, with China and Australia emerging in the top 10.

Figure 5: Top Ten Countries in Terms of Tourism Receipts (1990 & 2005)



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The UNWTO forecasts that Europe will remain the world's largest generating region of tourists in 2020, while the Asia Pacific will move to second place and North America will fall to third. Similarly, the UNWTO expects that Europe will continue to be the most popular destination in the world, but the Asia Pacific will become the second largest receiving region by 2020, while North America will again fall to third.

The top 10 markets' share of tourism expenditures has declined, decreasing the reach and impact of marketing resources focused on these markets only. Furthermore, the relative importance of source markets has changed, with emerging markets becoming increasingly important. Customer's choice of destinations has also become more wide-spread, with an increasing level of competition amongst destinations. What this means is that a greater emphasis is required in developing strategies and marketing efforts focused on carefully selected target markets if destinations are to attract a share of the growing worldwide tourism market.

2.1.2 Key Market Trends

The following section provides some relevant details regarding the economy, population, and tourism for key Canadian inbound travel markets. These markets include the major developed markets of Japan and Germany as well as the two large emerging markets of China and India.

2.1.2.1 Germany

Economic Profile

With a GDP of US$3.3 trillion in 2007, Germany is the 3rd largest economy in the world. With a population of approximately 82 million people, Germany had a nominal GDP per capita of US$39,600 in 2007. Additionally, over the period from 1980 to 2007, German real GDP grew at a

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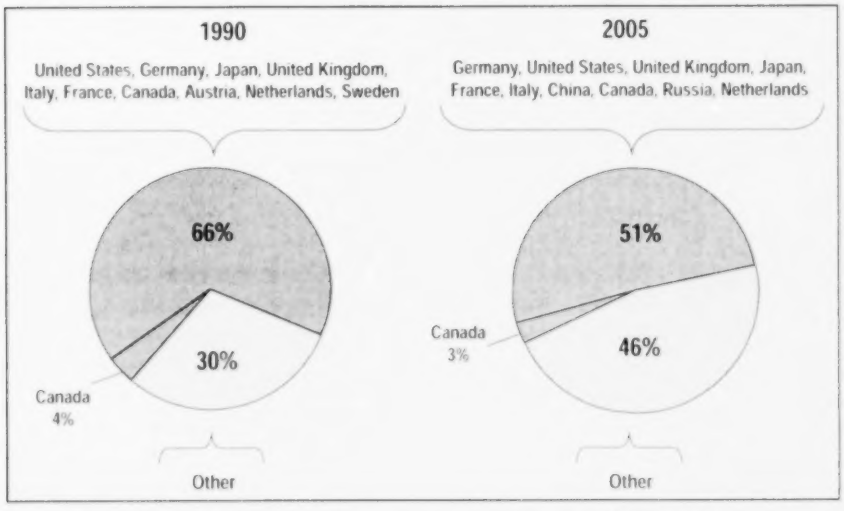

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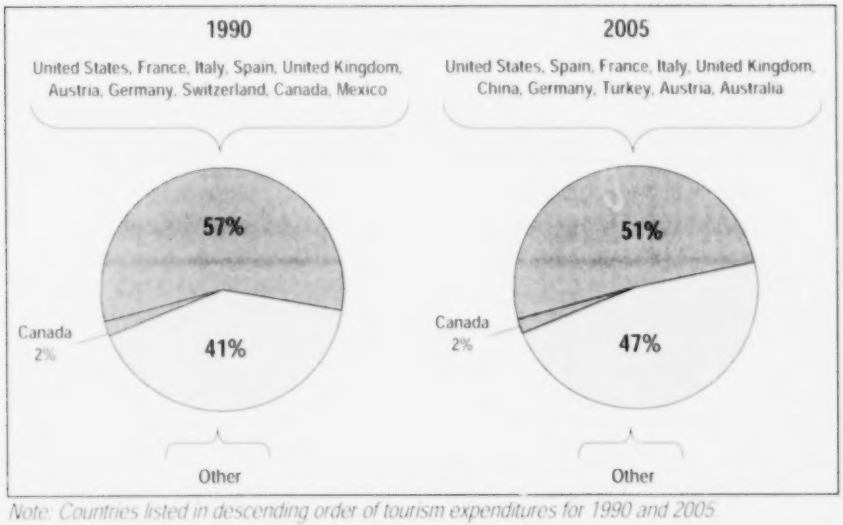

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The UNWTO forecasts that Europe will remain the world's largest generating region of tourists in 2020, while the Asia Pacific will move to second place and North America will fall to third. Similarly, the UNWTO expects that Europe will continue to be the most popular destination in the world, but the Asia Pacific will become the second largest receiving region by 2020, while North America will again fall to third.

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2.1.2 Key Market Trends

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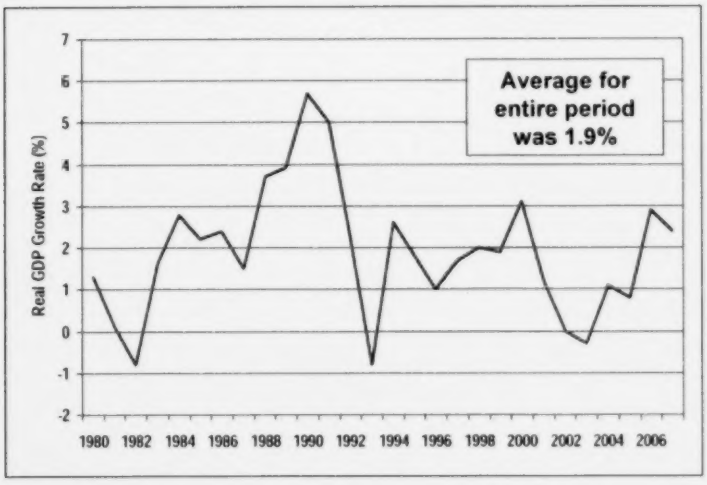
2.1.2.1 Germany

Economic Profile

With a GDP of US$3.3 trillion in 2007, Germany is the 3rd largest economy in the world. With a population of approximately 82 million people, Germany had a nominal GDP per capita of US$39,600 in 2007. Additionally, over the period from 1980 to 2007, German real GDP grew at a

modest average annual growth rate of 1.9%, which is in the range of what is to be expected of a developed nation such as Germany.[1]

Figure 6: German Real GDP Annual Growth Rates: 1980-2007



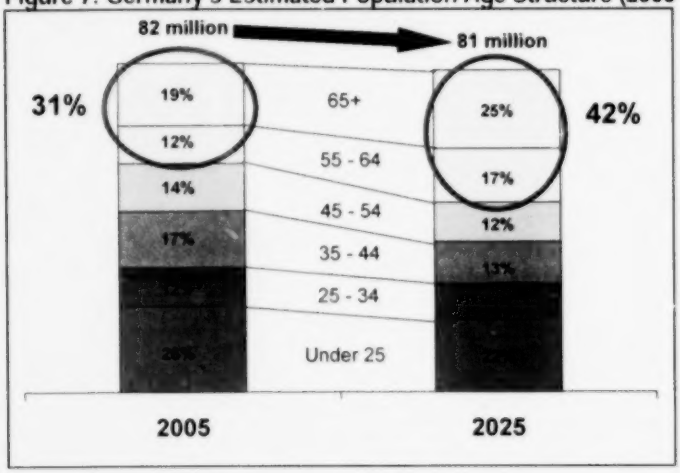
Source: IMF "World Economic Outlook Database", October 2007.

Population

Europe is forecast to have a declining population in 2025 and 2050. General population levels in Europe are characterised by low fertility rates coupled with high mortality rates. The result is a rapidly ageing population and a shrinking population base in future years. Germany's population under the age of 45 is expected to make up 46% of the country's population in 2025 on a marginally smaller population base, compared to 55% today. Figure 7 shows Germany's population age structure today and in 2025.

[1] International Monetary Fund (IMF) Economic Outlook, 2007.

Figure 7: Germany's Estimated Population Age Structure (2005 & 2025)



Source: U.S. Census Bureau, International Database.

Tourism

In 2006 German tourists spent US$74.8 billion abroad, making Germany the biggest spender in the world when it comes to international tourism.

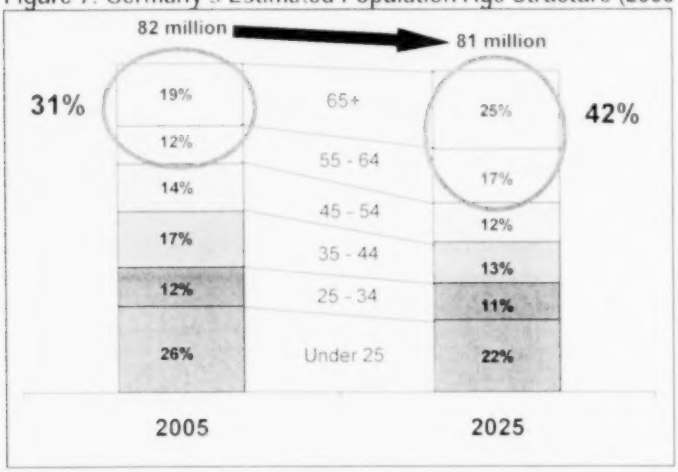
2.1.2.2 Japan

Economic Profile

With a GDP of US$4.3 trillion in 2007, Japan is the 2nd largest economy in the world. With a population of approximately 128 million people, Japan had a nominal GDP per capita of US$34,000 in 2007. Additionally, over the period from 1980 to 2007, Japanese real GDP grew at an average annual growth rate of 2.3%. As shown in Figure 8, Japan experienced very high levels of growth during the 1980s before experiencing an economic slow down in the 1990s.[2]

[2] International Monetary Fund (IMF) Economic Outlook, 2007.

Figure 7: Germany's Estimated Population Age Structure (2005 & 2025)



Source: U.S. Census Bureau, International Database

Tourism

In 2006 German tourists spent US$74.8 billion abroad, making Germany the biggest spender in the world when it comes to international tourism.

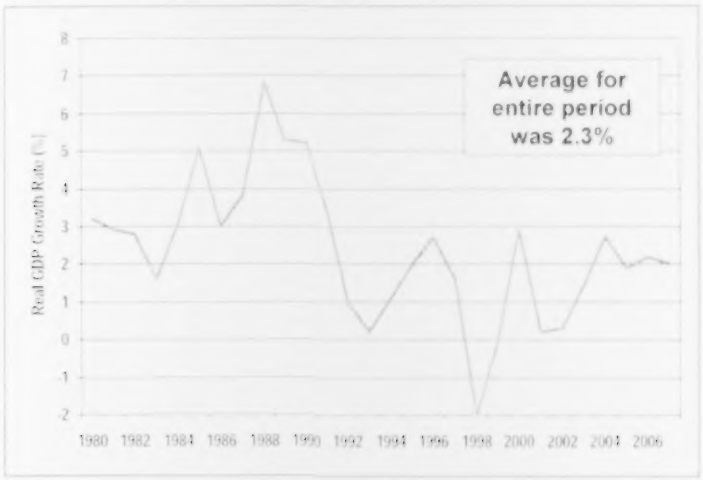
2.1.2.2 Japan

Economic Profile

With a GDP of US$4.3 trillion in 2007, Japan is the 2nd largest economy in the world. With a population of approximately 128 million people, Japan had a nominal GDP per capita of US$34,000 in 2007. Additionally, over the period from 1980 to 2007, Japanese real GDP grew at an average annual growth rate of 2.3%. As shown in Figure 8, Japan experienced very high levels of growth during the 1980s before experiencing an economic slow down in the 1990s.[2]

[2] International Monetary Fund (IMF) Economic Outlook, 2007.

Figure 8: Japanese Real GDP Annual Growth Rates: 1980-2007

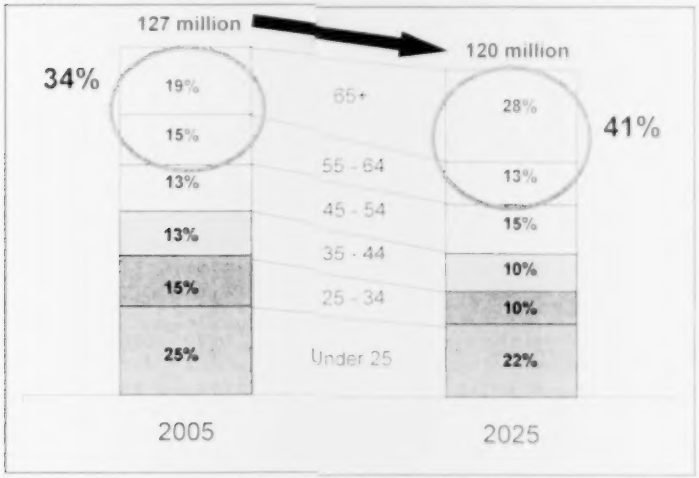


Source: U.S. Census Bureau, International Database

Population

Similar to Germany, Japan's population in 2025 is estimated to be less than 2005. High mortality rates and low fertility rates characterise Japan's population. Japan's population under the age of 45 is expected to shrink from 53% to 42% in 20 years time. The population group over the age of 65 grows to 28% of the total population. Japan is currently home to 23,000 people over the age of 100.

Figure 9: Japan's Estimated Population Age Structure (2005 & 2025)



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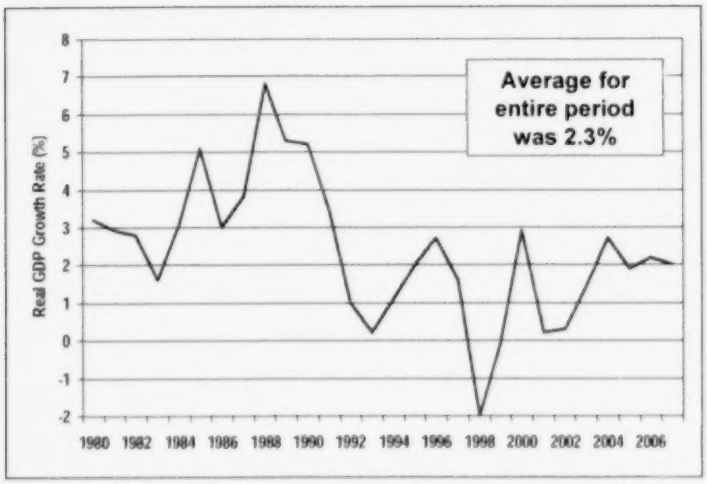

Source: U.S. Census Bureau, International Database.

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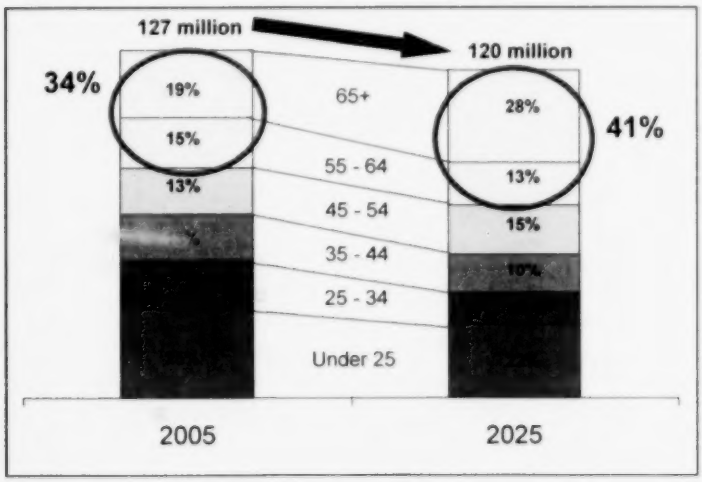


Source: U.S. Census Bureau, International Database.

Tourism

In 2006 Japanese tourists spent US$26.9 billion abroad, making Japan the 6th largest spender in the world when it comes to international tourism.

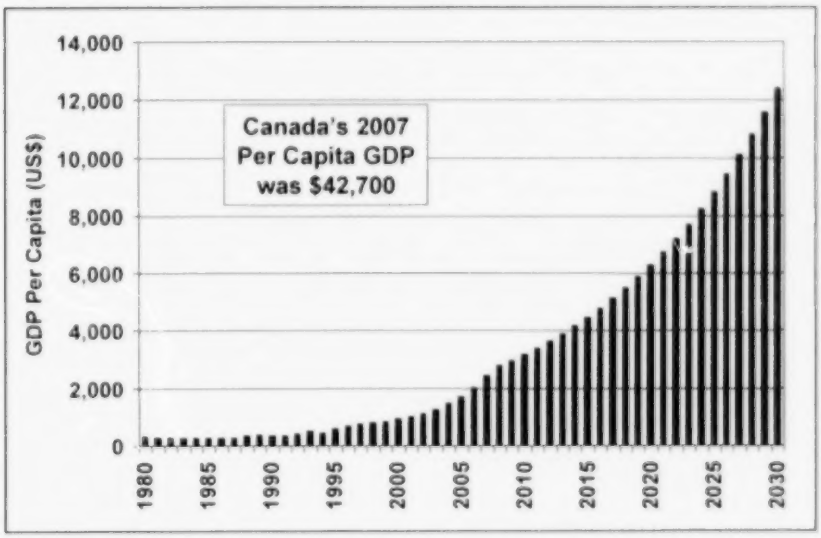
2.1.2.3 China

Economic Profile

China is the only country in the world to consistently report rapid economic growth, even during the economic slowdowns of 1997 and 2001. When combined with low birth rates and a stabilising population, this is translating into major increases in wealth per capita. China's middle class is also increasing in size. In 2000, it was estimated that 95 million Chinese had annual incomes in the range of US$18,000 to $20,000.

With a nominal GDP of approximately US$3.2 trillion, China is the 4th largest economy in the world. A major driving factor for future tourism from China is the projected increases in personal incomes. Figure 10 displays China's projected growth in GDP per capita. By 2030, it is expected that China will have per capita GDP (nominal) in excess of US$12,000.

Figure 10: China's Projected GDP Per Capita

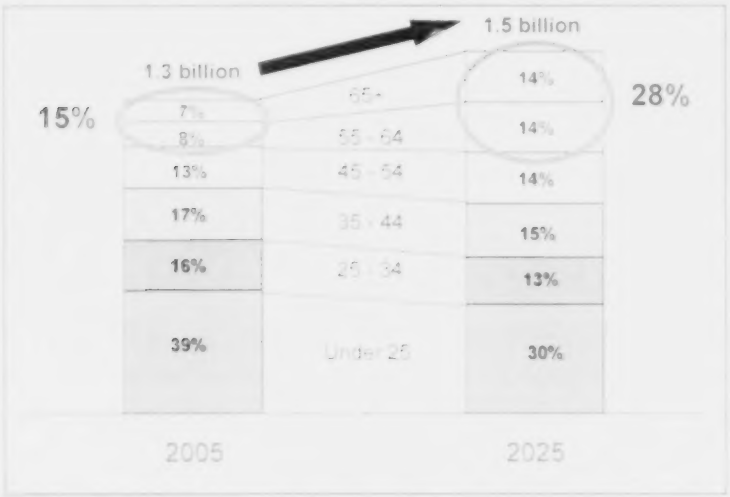


Source: IMF "World Economic Outlook Database", October 2007 with projections based on an assumed 7% annual growth rate.

Population

China's population, like other countries in the world, is ageing. To stem its rapid population growth the government instituted a "one child policy" in 1979. This is now resulting in an ageing population profile (See Figure 11). Since the 1970s, the proportions of infants and youths are decreasing, while the proportion of senior citizens is steadily growing due to improved economic conditions which are increasing life expectancies.

Figure 11: China's Estimated Population Age Structure (2005 & 2025)



Tourism

Currently, Chinese nationals are only permitted non-business travel to destinations that have been granted Approved Destination Status (ADS) by the Chinese National Tourism Association (CNTA). The status allows Chinese nationals to travel to ADS countries using a tourist exit visa, provided qualified travel organisations are used to arrange travel. At present, there are close to 600 travel organisations in China that have been approved to handle inbound/outbound travel to ADS countries. Furthermore, these agencies have been granted permission by the CNTA to issue visas for tour group participants.

In 2004, the CNTA signed an agreement with the European Community that would help facilitate group tourism to Europe. Twelve member states: Austria, Belgium, Finland, France, Germany, Greece, Netherlands, Italy, Luxembourg, Portugal, Spain and Sweden were granted ADS by China. One of the first counties to be given ADS status, Australia, saw its tourists from China grow at a very dramatic pace. Most recently, in January 2005, both Canada and the UK received Approved Destination Status from the Chinese government. However, ADS for Canada has not yet been ratified and China tourism visits to Canada have been growing but not at the level they could be if Canada had ADS.

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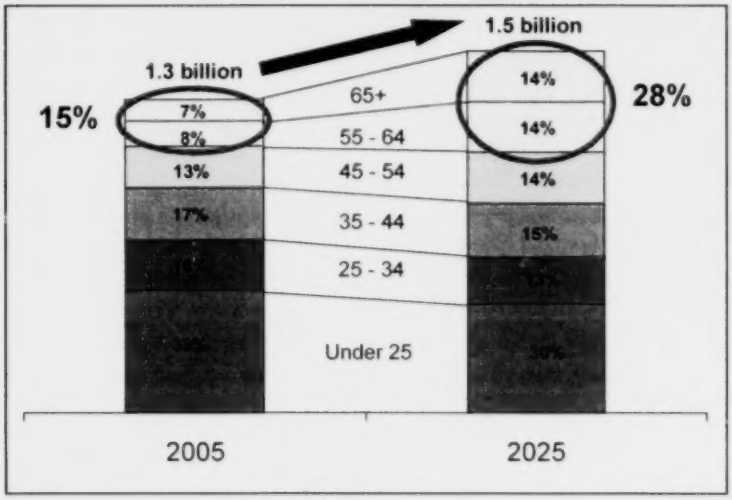

Source: U.S. Census Bureau, International Database.

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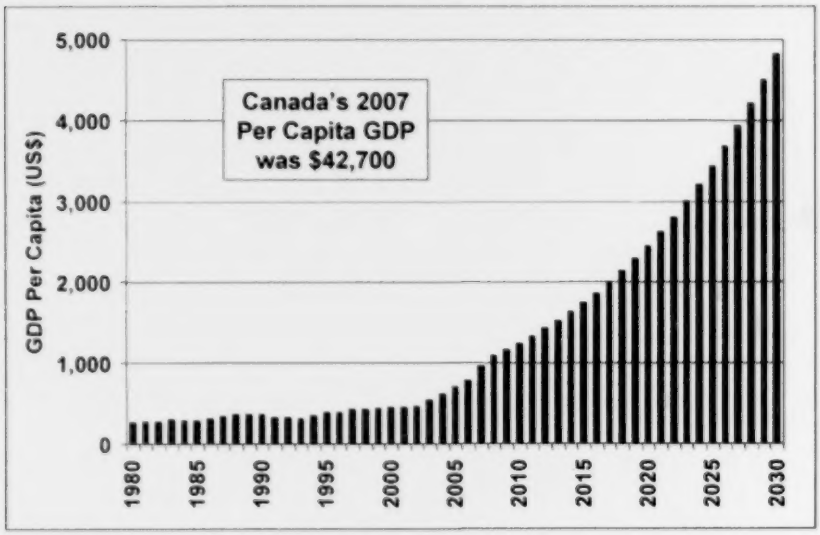
2.1.2.4 India

Economic Profile

India is one of the largest and fastest growing economies in the world. In 2007, India had a GDP of approximately US$1.1 trillion, making it the 13th largest economy in the world.[3] With a population of approximately 1.1 billion people, GDP per capita in 2007 was US$1,000. Although this is low by Canadian standards (Canada has a GDP per capita of US$42,700 in 2007), India has experienced rapid and robust income growth over the past 5 years. Over the period of 2003 to 2007, real (i.e. adjusted for inflation) GDP per capita in India has increased at an average annual rate of 7.2 %, whereas that of Canada has only increased at an average annual rate of 1.8 %. As shown below in Figure 12, if the Indian economy continues to grow at an annual rate of 7%, India will have a GDP per capita of approximately US$4,800 by 2030. Although, this is not very high relative to developed countries, the wealth in India is far from being equally distributed. Taking this into account, combined with India's sizeable population, an increase in GDP per capita will undoubtedly produce a large number of very wealthy individuals.[4]

Figure 12: India's Projected GDP Per Capita



Source: IMF "World Economic Outlook Database", October 2007 with projections based on an assumed 7% annual growth rate.

Population

India currently has a population of roughly 1 billion, second in the world only to China. The country's growth has somewhat slowed in the past decade. By 2025, India's population is expected to grow to 1.4 billion people (displayed in Figure 13).

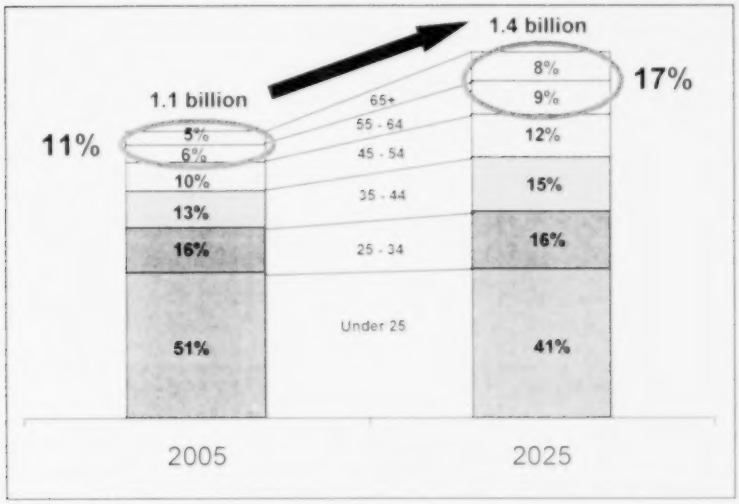
---

[3] International Monetary Fund (IMF) Economic Outlook, 2007.

[4] IMF "World Economic Outlook Database", October 2007

India has the largest middle class in the world (over 250 million people) along with the world's 5th largest economy after the USA, China, Japan and Germany. According to the World Tourism Organization, India's outbound travel has increased significantly to 5 million travelers in 1998 and is expected to grow to 20 million outbound passengers by 2005. As India's economy grows, higher disposable incomes will result. In recent years, India has developed its high tech expertise, which has resulted in greater amounts of travel overseas for its citizens.

Figure 13: India's Estimated Population Age Structure (2005 & 2025)



Source: U.S. Census Bureau, International Database

Tourism

With its large population and rapidly expanding economy, India is quickly becoming a major source of tourists for destinations all over the world. Over the period of 2001 to 2006, India's outbound travel market increased from 4.6 million travelers to 7.5 million travelers, which corresponds to an annual growth rate of approximately 10.4% (see Figure 14). Currently India is one of the top 20 tourism sources. Even if growth in tourism from India slows to 5% per annum, within 20 years India will have nearly 20 million outbound travelers.

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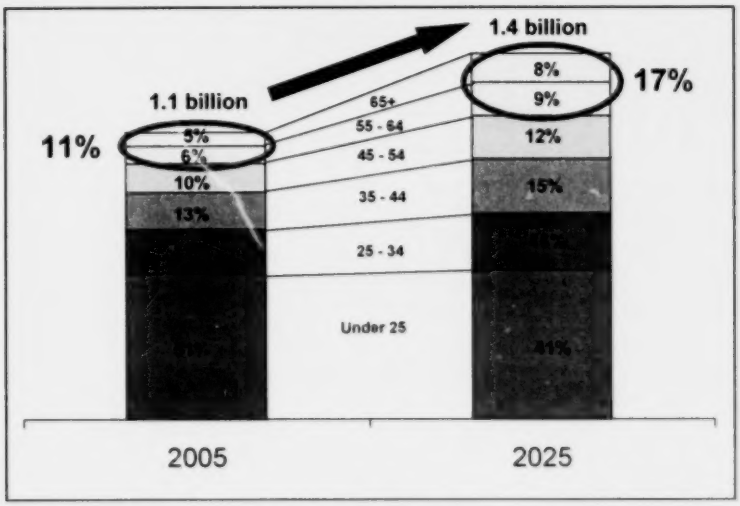

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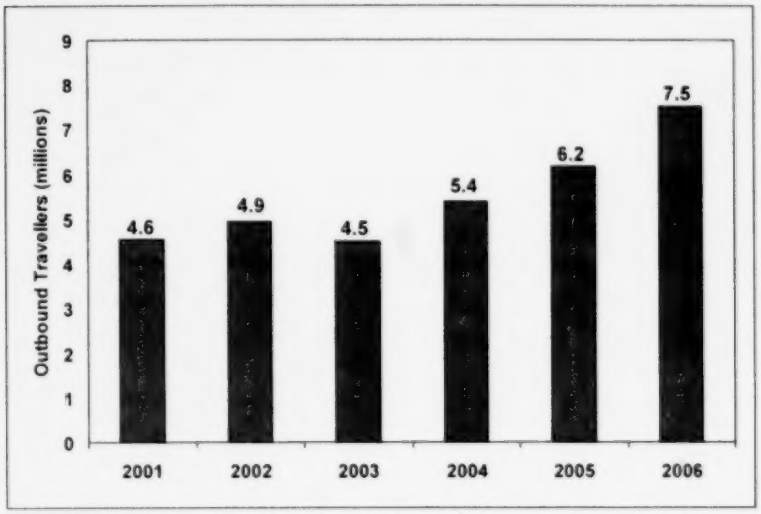
Figure 14: Indian Outbound Travellers: 2001-2006



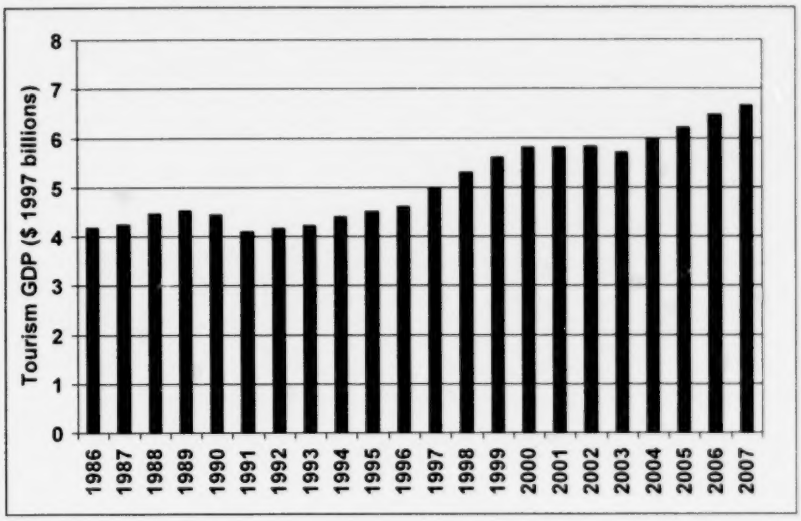
Source: Source: Canadian Tourism Commission, "India Consumer & Travel Trade Research", 2007.

Furthermore, Indian expenditures on tourism are growing considerably faster than growth in per capita income, currently growing in the range of 10-12% per year. Spending on tourism by Indians now exceed US$1 billion per annum.

2.1.3 National Trends

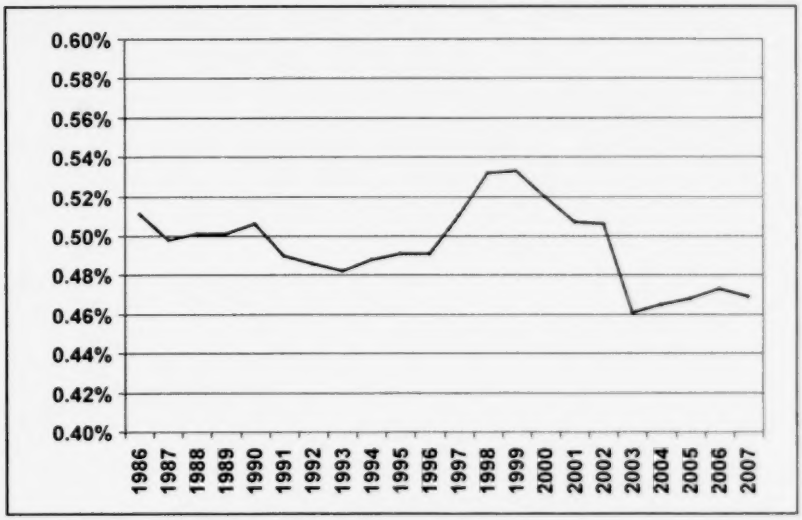
The tourism sector plays an integral part in the Canadian economy. Over the period from 1986 to 2007, the Canadian tourism sector real GDP (i.e. adjusted for inflation) has grown at an average annual growth rate of 2.2%, increasing from $4.2 (in 1997 dollars) billion in 1986 to $6.7 in 1997 dollars) billion in 2004. At the same time the GDP of Canada as a whole has grown at an average annual rate of 2.8%. As a result the share of Canada's GDP that is accounted for by tourism has decreased from 5.1% to 4.7% (see Figure 16).

Figure 15: Canadian Tourism GDP



Source: Statistics Canada.

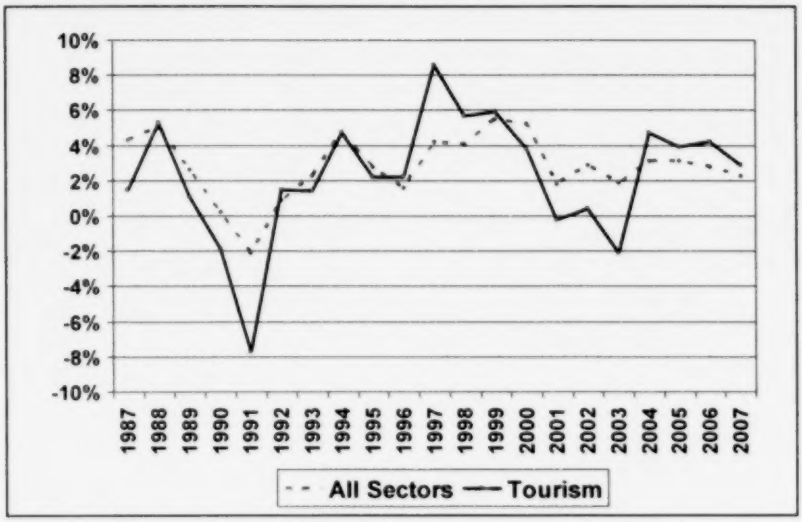
Figure 16: Tourism GDP as a Percentage of Total GDP



Source: Statistics Canada.

Furthermore, over the period of 1986 to 2007, the real growth rates of tourism GDP have been strongly correlated with real GDP growth rates of the economy as a whole. Although these two aforementioned growth rates generally move in the same direction, the tourism industry seems to exhibit more volatility, as shown in Figure 17. This volatility is not cause for alarm, as it is expected that any single industry would demonstrate higher volatility than the economy as a whole.

Figure 17: Annual Real GDP Growth Rates of the Canadian Tourism Sector



Source: Statistics Canada.

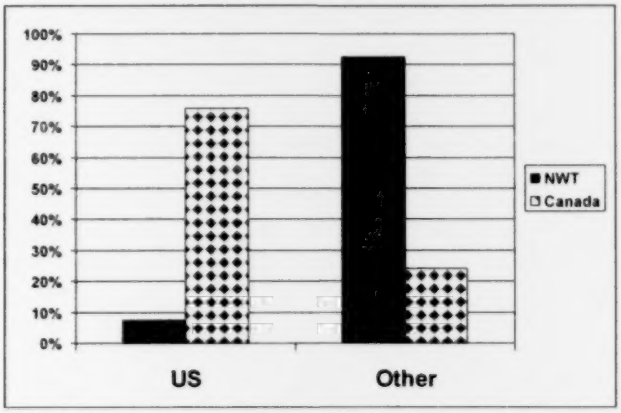
2.1.4 NWT Trends

In 2006-2007 a total of 63,461 non-resident travelers visited the Northwest Territories. Of this total it is estimated that 61% were leisure travelers and 39% were business travelers. Furthermore, the trip purpose of the leisure visitors was as follows;34% general touring, 21% visiting friends and relatives, 18% Aurora viewing, 18% fishing, 5% fishing, 3% hunting. Additionally, it is estimated that annual visitor spending in the Northwest Territories was approximately $113.6 million.[5]

In regards to the composition of international visitors to the Northwest Territories, the majority of international visitors are from countries other than the USA. Specifically, in summer 2006 only 7% of all international tourists who visited the Northwest Territories were from the USA. This is very different from the national average where 76% of all international visitors to Canada as a whole were from the USA.

[5] Government of Northwest Territories, Northwest Territories Industry, Tourism and Investment, "Visitor Markets Strategic Overview: Northwest Territories", 2007.

Figure 18: Composition of International Tourist Arrivals: 2006



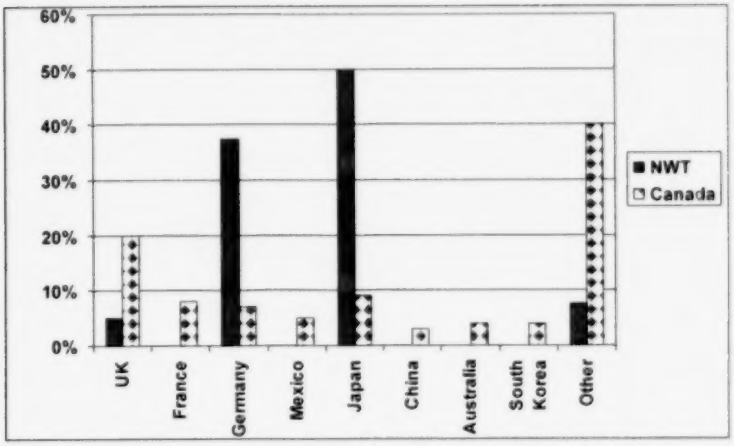
Sources: Statistics Canada, International Travel Survey, 2006 for Canada. Government of Northwest Territories, Northwest Territories Industry, Tourism and Investment, "Visitor Markets Strategic Overview: Northwest Territories", 2007 for Northwest Territories

In regards to non-USA international visitors, the biggest markets for the NWT, by far, are Germany and Japan. As shown in

Figure 19, 50% of non-USA international visitors came from Japan and 37% came from Germany in 2006. In comparison, for Canada, as a whole, only 14% of non-USA international visitors came from Japan and 12% came from Germany. Clearly, the Northwest Territories tourism industry represents a niche market that attracts the majority of its visitors from a few key markets.

The German visitors usually fly into Whitehorse on Condor charter flights, rent an RV and visit the southwest region of NWT as well and Inuvik. Some also come by RV from BC and Alberta.

Figure 19: Composition of International (excluding USA) Tourist Arrivals to the NWT and Canada as a Whole



Sources: Statistics Canada, International Travel Survey, 2006 for Canada. Government of Northwest Territories, Northwest Territories Industry, Tourism and Investment, "Visitor Markets Strategic Overview: Northwest Territories", 2007 for Northwest Territories.

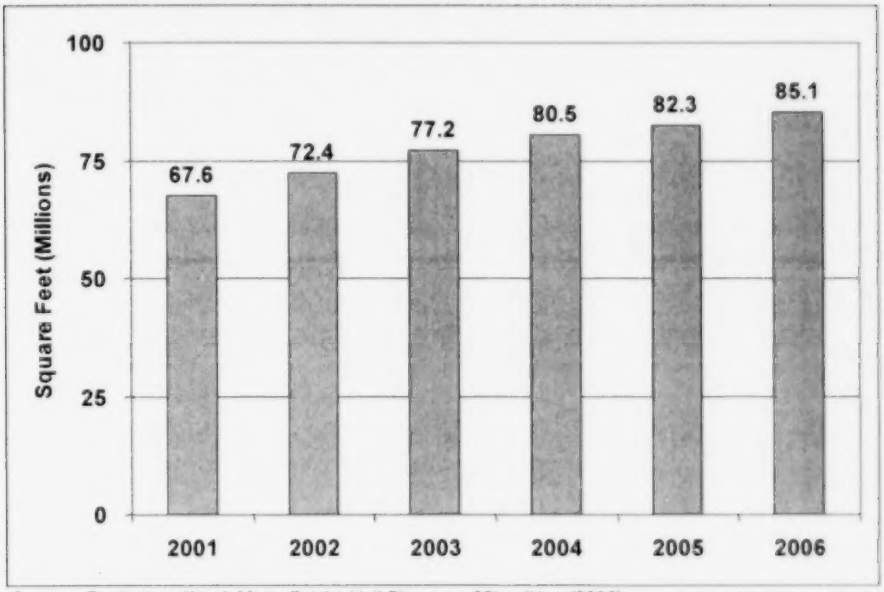
2.2 Meeting Market Trends

2.2.1 North America

According to Tradeshow Week,[6] the total amount of trade and exhibition space in the USA and Canada has increased 26%, or 4.7% per annum, from 68 million sq. ft. in 2001 to 85 million sq. ft. in 2006 (Figure 20). In comparison, from 2001 to 2006, the Canadian economy grew at a rate of 2.7% per annum.

[6] Tradeshow Week has been the voice of the trade and exhibition industry for over 35 years. Tradeshow Week produces signature editorial coverage to the world-renowned directories on the trade and exhibition industry.

Figure 20: Total Exhibit Space in the USA and Canada, 2001-2006



Source: Tradeshow Week Major Exhibit Hall Directory, 29th edition (2006).

Tradeshow Week states that 45% of trade show facilities were of a size between 100,000 sq. ft. and 499,999 sq. ft. (See Figure 21). The average facility in North America offers 186,000 sq. ft. of exhibit space and 58,000 sq. ft. of meeting space.

Figure 21: Distribution of Facilities in the USA and Canada, by Size

Facility Size (sq.ft.)	% Share of Total
500,000 or more	8%
100,000 – 499,999	45%
50,000 – 99,999	31%
25,000 – 49,999	16%
Total	**100%**

Source: Tradeshow Week Major Exhibit Hall Directory, 29th edition (2006).

Of the 41 facilities located in Canada reviewed by Tradeshow Week, the average total exhibit space offered is 208,000 sq. ft., slightly higher than the overall Canada and the USA combined average, with an average of 186,000 sq. ft. of meeting room space. Figure 22 displays the total and average exhibit and meeting room space in Canada and the USA

Figure 22: Canada and the USA Exhibit Space, 2006

	Canada & USA Exhibit Halls & Hotels		Canada Exhibit Halls & Hotels		USA Exhibit Halls & Hotels	
Type of Space	*Total (sq.ft)*	*Average (sq.ft)*	*Total (sq.ft)*	*Average (sq.ft)*	*Total (sq.ft)*	*Average (sq.ft)*
Total Exhibit Space	85,106,408	185,822	8,515,051	207,684	76,591,357	183,672
Prime Exhibit Space	71,127,968	155,301	6,896,005	168,195	64,231,963	154,033
Meeting Space	25,127,982	58,167	1,544,148	40,635	23,583,834	56,556
Number of Meeting Rooms	11,421	26	612	16	10,809	26
Number of Facilities	458		41		417	

Source: Tradeshow Week Major Exhibit Hall Directory, 29th edition (2006).
Prime Exhibit Space is designated exhibit hall space.
Total Exhibit Space is includes prime exhibit space plus other flexible space that can be used for exhibits.

2.2.2 NWT Convention Centre Feasibility Study

In 2002 Graham Edmunds and Conventional Wisdom conducted the "NWT Convention Centre Feasibility Study" on behalf of the Government of the Northwest Territories. The conclusion of the study was "that there is adequate demand for meeting, conventions and tradeshows in the Northwest Territories to support a convention centre in Yellowknife". This conclusion was based on the following key indicators;

Yellowknife is rare (if not singular) among governmental centers in not having a convention centre

The North American convention and tradeshow industry continues to grow faster than facilities are built to support it

The existing lodging supply and transportation network have adequate capacity now and can respond quickly to increases in demand

Seasonal tourism and convention peaks are complementary

Opportunities exist to extend visitor stays to this perceived exotic destination that will benefit regional tourism-related businesses

Finally, the report recommends that initially a facility of approximately 33,500 sq. ft should be constructed and further additions could be added at a later date increasing the size of the facility up to as large as 120,000 sq. ft depending on population and market growth.

Based on the above mentioned feasibility study, Western Management Consultants developed the "*Northwest Territories Convention and Meetings Marketing Function: Strategy and Business Plan*" in 2005 on behalf of the Yellowknife Chamber of Commerce. The purpose of this research was to prepare a strategy and business plan for a meeting and convention marketing function in the Northwest Territories. The report begins by providing a profile of the existing convention centres in the North. It then goes on to conduct a supply side assessment of the market and concludes that in 2005, Yellowknife had approximately 730 overnight hotel rooms and a total meeting room capacity for 617 people, with the largest meeting room having a capacity for 350 people. On the demand side, hoteliers in Yellowknife estimate the average annual occupancy rate is between 75% and 80%. Furthermore, the periods of greater availability are in spring (April) and in the late fall (October, November) which coincides with the traditional period of high demand for meetings and conventions.

Next, a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) was conducted for the Yellowknife convention and meetings market function. Based on this analysis a strategy and business plan has been developed. Some key points of the strategy and business plan are as follows;

- Build the meetings business over three years, supported by government seed funding
- Create an independent meeting marketing function, operating under Northern Frontier Visitors Association (NFVA) Board that markets all of NWT
- Plan for industry levy launch in Year Four, transitioning away from solely government support
- Position government association markets to Yellowknife
- Position corporate meetings to NWT communities where appropriate
- Position Incentive Travel to Yellowknife and throughout the territory
- Position the pre and post meetings market to lodges, communities and operators throughout NWT

2.3 Aviation Developments

2.3.1 Market Forecasts and Trends

Both Boeing and Airbus currently conduct a great deal of research regarding trends and developments in the aviation industry. Recently, Boeing and Airbus each produced reports entitled "*Current Market Outlook 2007*" and "*Global Market Forecast: Flying by Nature 2007-2026*" respectively, that provide forecasts of passenger and cargo levels for 2026. Additionally, the airbus report provides forecasts of aircraft deliveries for the entire world and by region for the next 20 years. Some of the key predictions relevant to air travel and air cargo markets are provided in the subsequent paragraphs.

Airline traffic, measured by revenue passenger-kilometres[7], is predicted by both aircraft manufacturers to grow at an annual rate of 5% over the period of 2006 to 2027.[8] Airbus also provides a break down of the forecasted annual growth in passenger traffic between the various regions of the world. As shown in Figure 23 below, the majority of traffic growth will come from travel within the Asia-Pacific region and between North America and the Middle East. On the other hand, travel within North America is predicted to grow at an annual rate significantly below the world average, although this is to be expected of a mature market.

Figure 23: Airlines Forecasted Annual Passenger Traffic Growth Rates by Region

Between	N. America	Europe	Middle East	Asia/Pacific
N. America	2.8%	4.5%	9.7%	5.8%
Europe		4.6%	7.3%	6.0%
Middle East			6.4%	7.0%
Asia/Pacific				7.8%

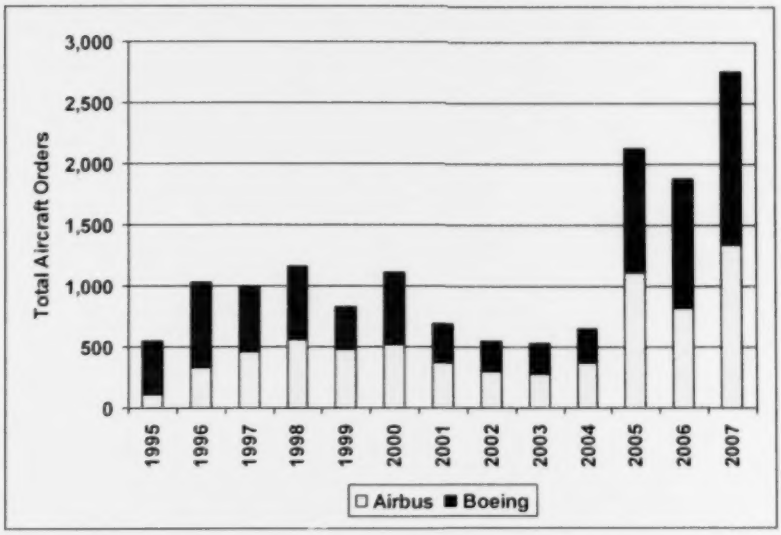
Source: Airbus "Global Market Forecast: The Future of Flying 2006-2025"

In order to accommodate this increase in demand, airlines will respond by increasing supply. Airbus forecasts that over the period of 2007-2026 there will be a twofold increase in the number of flight frequencies. Similarly, Boeing predicts that the number of aircraft in service will increase from its 2006 level of 18,230 aircraft world wide to 36,420 aircraft by 2026, an almost 100% increase. Currently, there are already clear signs that airlines are getting ready to increase capacity. As shown in Figure 24 there has been a large surge in aircraft orders over the past three years.

[7] Revenue Passenger Kilometres: The number of revenue passengers carried multiplied by the distance flown, a common airline industry measure that combines both passengers flown and distances travelled.

[8] Boeing predicts 5.0% for the period of 2006-2025 and Airbus predicts 4.9% for the period of 2007-2026.

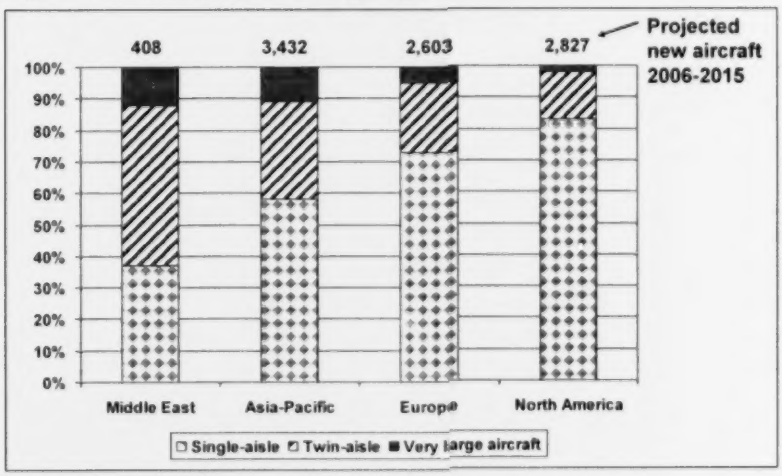
Figure 24: Boeing and Airbus Orders: 1995-2007



Source: Airbus and Boeing websites

Interestingly, 31% of these new aircraft will be twin-aisle and "very large" aircraft (e.g. Airbus A380). Since these aircraft are capable of long-haul flights, this implies that there will be significantly more direct air services available in the future. As expected, a large part of this growth in supply will be driven by the Asia-Pacific region (see Figure 25).

Figure 25: New Aircraft Orders by Region

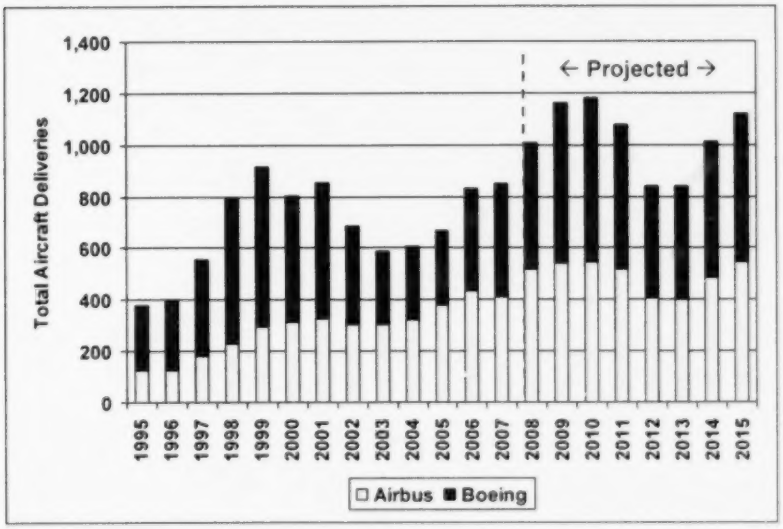


Source: Airbus "Global Market Forecast: The Future of Flying 2006-2025"

When it comes to timing of actual deliveries, it is predicted that there will be surges in aircraft deliveries around 2010 and 2015 (see Figure 26). Furthermore, Boeing predicts that more than one third of aircraft deliveries (by value) will be accounted for by Asia-Pacific, compared with a quarter for North America. It is probably no surprise that a large driver of this growth in the Asia-

Pacific region is China. From 2006 to 2025 it is predicted that Chinese domestic aircraft capacity will grow at an annual rate 8.1 percent.[9]

Figure 26: Boeing and Airbus Aircraft Deliveries: 1995-2015



Source: Airbus and Boeing websites and The Airline Monitor, July 2007

Similar to predicted trends for passenger traffic, cargo traffic (measured by revenue tonne-kilometres), is predicted to grow at an annual rate of approximately 6% over the period of 2006-2026.[10] According to Boeing, this growth will be comprised of a 6.2% annual growth rate for air freight and 2.5% annual growth rate for airmail. As a result, world air cargo traffic volume, measured by revenue tonne-kilometres, will triple over the 20 year period. In order to accommodate this increase in cargo volumes, it is estimated that 2,480 passenger aircraft will be converted to freighters and 870 new dedicated freighter aircraft will be delivered over the 20 year period. Additionally, the average size of freighter aircraft will increase in order to accommodate this increase in cargo volume. It is predicted that by 2026, about 64% of the worldwide freighter fleet will consist of wide body aircraft as opposed to 58% in 2006.[11]

2.3.2 Aircraft Technology

In the past few years there have been significant breakthroughs in aircraft technology. Specifically, the recent development of Boeing's 787 Dreamliner and Airbus' A350 will make it much easier for airlines to provide more long-haul non-stop services. More importantly for Yellowknife, the economics of these aircraft will allow airlines to provide more direct services in smaller markets. As a result, these aircraft will provide a valuable tool for the development of the NWT-Asia and NWT-Europe tourism markets.

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[9] Boeing "Current Market Outlook 2007".

[10] Boeing predicts 6.1% for the period of 2006-2025 and Airbus predicts 5.8% for the period of 2007-2026.

[11] Boeing "Current Market Outlook 2007".

In regards to the medium-haul markets, the development of Bombardier's CSeries and Embraer's E190 will allow airlines to provide more non-stop service on routes that were traditionally served only by larger aircraft. The range and economics of these aircraft will provide valuable opportunity for the development of the NWT-North America tourism market.

A brief description outlining the key features and specifications of the aforementioned aircraft and the implications for the NWT is provided in the subsequent paragraphs.

The 787 Dreamliner, scheduled to enter service in 2009, is Boeing's first new aircraft since launching the 777 in 1990. The 787 will come in three series, the –300, –800 and –900, with the latter two intended for long-haul operations. Three-class seating configurations and design ranges put these planes in competition with the Boeing 767 and Airbus A330 families, as demonstrated in Figure 27 below.

Figure 27: Comparison of Select Long-range Aircraft

Aircraft	Seating Capacity	Maximum Range (nm)
787-300	**296**	**3,050**
787-800	**223**	**8,200**
787-900	**259**	**8,500**
767-200ER	181	6,600
767-300ER	218	6,000
767-400ER	245	5,650
A350-800	**270**	**8,300**
A350-900	**314**	**8,100**
A350-1000	**350**	**8,000**
A330-200	253	6,750
A330-300	295	5,650

Source: Airbus and Boeing websites

Recently, new orders have been announced by Korean Airlines, Air Canada and Northwest Airlines, bringing the order book to over 250 units from 20 airlines. The 787 offers several critical benefits to the airlines that will operate it. First, the –800 and –900 variants are medium-sized aircraft designed with a maximum range of over 8,000 nautical miles; this is comparable to the much larger 777, 747 and A340 aircraft families. As the figure above displays, current mid-sized aircraft are limited to about 6,600nm. This opens up a huge number of potential non-stop routes

which are too long for existing 767 and A330 aircraft, but too small for the larger jets in the market to serve profitably.

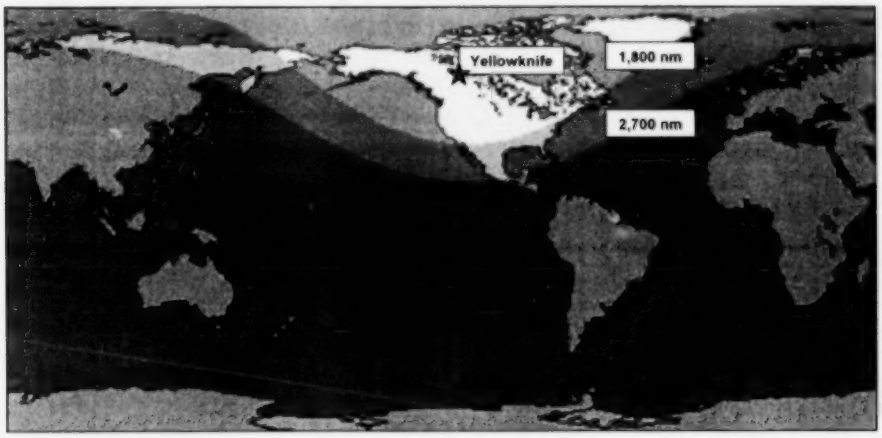
Similar to the Boeing 787 Dreamliner, the Airbus A350 is a long-range, mid-sized, wide-body aircraft. Currently under development, the A350 is primarily a response to Boeing's 787 Dreamliner. The A350 will involve three series, the –800, –900 and –1000 and is currently scheduled to enter service in 2013. Like the Boeing 787 Dreamliner, the range and seating capacity allow these aircraft to compete with the currently operated Boeing 767 and Airbus A330 families, as demonstrated in Figure 27.

Even within the range limits of the 767 and the A330, the new 787 and the A350 can offer significant benefits. With a lower unit cost than peer aircraft, the 787 and A350 can make non-stop flights viable on thinner routes, including secondary markets that cannot currently be served profitably. Consider a North America – Eastern Europe service, which may not have the market size to support a 767-400 operation. With its lower trip costs and fewer seats, it is estimated that the breakeven load factor for a 787-800 or A350-800 would be five percentage points lower than the 767. This translates into 20 fewer passengers per flight required to make the service viable.

This type of improvement could allow airlines to offer additional frequencies on current routes, and could result in new, sustainable air services on routes which are currently considered marginal for large aircraft. For the first time, scheduled long-haul international air service could be achievable for hundreds of cities.

In regards to the NWT-North American market, Bombardier's new CSeries will be larger than the current Canadair Regional Jets. The CSeries will come in two sizes, a 110-seat model and a slightly larger 130-seat version, with a maximum range of 1,800 nm for the regular versions and 2,700 nm for extended range versions. These aircraft will provide airlines with the ability to serve routes that are too long for smaller aircraft but have markets that are too small for the larger Airbus and Boeing aircraft. The CSeries is scheduled to enter service in 2013.

Figure 28: Bombardier CSeries Range Map for Yellowknife

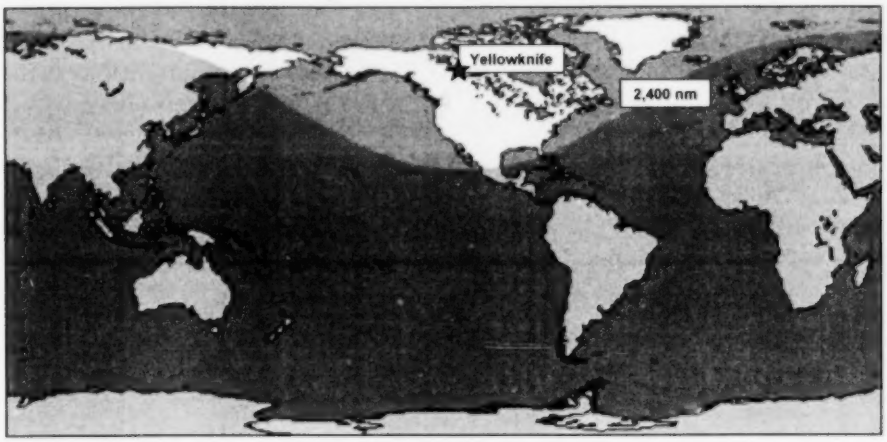


Source: Bombardier website and Great Circle Mapper.

Similar to Bombardier's CSeries, Embraer's E190 and E195 are designed to serve medium-haul routes that are too small for the larger Boeing and Airbus aircrafts. The E190 and E195 entered the market in 2004 and have a maximum seat capacity of 114 and 122 respectively. Furthermore, the maximum range is 2,400 nm for the E190 and 2,200 nm for the E195.

The range of Bombardier's CSeries and Embraer's E190 and E195 would allow for non-stop service between Yellowknife and places as far away as Houston, TX (Yellowknife to Houston is 2,087 nm). Furthermore, due to the efficiency of these aircraft per seat, operating cost will allow airlines to provide non-stop air services in smaller markets that in the past have not been economically viable.

Figure 29: Embraer E190 and E195 Range Map for Yellowknife



Source: Embraer website and Great Circle Mapper.

2.3.3 Aircraft Fleets

Historical and projected fleet sizes from 2002-2011 are shown in Figure 30 through Figure 32 below for the following airlines;

- Japan Airlines
- Lufthansa
- United Airlines

Additionally, current fleet information is provided in

Figure 33 below for the following charter airlines;

- Condor
- LTU
- Martinair

Figure 30: Japan Airlines Historical and Projected Fleet: 2002-2011

Aircraft	Year End Fleet					On Order & Option	Projected Year End Fleet				
	2002	2003	2004	2005	2006		2007	2008	2009	2010	2011
737-400	4	4	3	3	2		2	0			
737-800					1	39	7	18	28	34	40
747-200/300	33	31	28	26	22		16	14	5	5	5
747-400	42	42	44	44	44		44	44	44	44	44
767-200/300	24	29	34	37	38	*11*	43	48	49	49	49
777-200/300	12	26	31	36	38	*8*	42	43	45	46	46
787-3						*13*				3	5
787-8						*37*		1	10	12	14
A-300		33	28	26	22		22	22	22	22	22
MD-80		24	26	23	22		21	12	8	0	
MD-90		16	16	16	16		16	16	16	16	10
DC-10	12	10	7	0							
MD-11	6	3	0								
Total Fleet	**133**	**218**	**217**	**211**	**205**	***108***	**213**	**218**	**225**	**231**	**235**
	=====	=====	=====	=====	=====		=====	=====	=====	=====	=====
% Change	(0.7)	63.9	(0.5)	(2.8)	(2.8)		3.9	2.3	3.2	2.7	1.7

Source: The Airline Monitor, October 2007.

Figure 31: Lufthansa Historical and Projected Fleet: 2002-2011

Aircraft	Year End Fleet					On Order & Option	Projected Year End Fleet				
	2002	2003	2004	2005	2006		2007	2008	2009	2010	2011
737-300	36	34	33	33	33		33	20	10	0	
737-500	29	27	26	29	29		30	30	20	10	0
747-200/300	2	0					1	0			
747-400	30	30	30	30	30		30	30	30	30	30
747-8						*20*				7	13
767-300		2	0								
A-300	14	9	15	13	13		14	14	14	14	14
A-310	5	5	0								
A-319	16	17	15	18	20	*5*	21	26	26	26	26
A-320	33	30	34	36	36	*10*	38	42	46	46	46
A-321	26	26	26	26	26	*45*	28	34	40	46	54
A-330	2	5	11	12	10	*5*	11	14	15	15	15
A-340	34	34	40	39	42	*10*	45	49	52	52	52
A-380						*15*			2	5	8
EMB-190						*30*			10	20	30
Total Fleet	**227**	**219**	**230**	**236**	**239**	***140***	**251**	**259**	**265**	**271**	**288**
	=====	=====	=====	=====	=====		=====	=====	=====	=====	=====
% Change	4.1	(3.5)	5.0	2.6	1.3		5.0	3.2	2.3	2.3	6.3

Source: The Airline Monitor, October 2007.

Figure 32: United Airlines Historical and Projected Fleet: 2002-2011

Aircraft	Year End Fleet					On Order & Option	Projected Year End Fleet				
	2002	2003	2004	2005	2006		2007	2008	2009	2010	2011
737-300	101	89	86	63	64		64	64	64	64	64
737-500	57	57	37	30	30		30	30	30	30	30
747-400	34	31	31	30	30		30	30	30	30	30
757-200	97	96	97	97	97		97	97	97	97	97
767-200/300	54	49	41	35	35		35	35	35	35	35
777-200/300	60	55	53	52	52		52	52	52	52	52
A-319	55	55	55	55	55	23	55	55	55	55	63
A-320	96	97	97	97	97	19	97	97	97	97	99
Total Fleet	**554**	**529**	**497**	**459**	**460**	**42**	**460**	**460**	**460**	**460**	**470**
	=====	=====	=====	=====	=====		=====	=====	=====	=====	=====
% Change	3.2	(4.5)	(6.0)	(7.6)	0.2		-	-	-	-	2.2

Source: The Airline Monitor, October 2007.

Figure 33: Selected Charter Airlines Current Fleets

Aircraft	Condor	LTU	Martinair
A-320	12	10	
A-321		4	
A-330		12	
747-200C			2
747-400BCF			3
757-300	13		
767-300ER	9		6
MD-11F			7
Total Fleet	**34**	**26**	**18**

Source: Airline websites as of March 12, 2008.

2.3.4 Airline Trends

Alliances

Benefits of Air Canada: Star Alliance

In regards to Air Canada service to/from Yellowknife, it is important to note that Air Canada is a member of Star Alliance. As a result, Air Canada's flight schedules are coordinated to permit almost seamless travel with the 18 other Star Alliance members. It should be noted that Lufthansa and United Airlines are Star Alliance members, which could prove useful for the development of the Germany-NWT and USA-NWT tourism markets respectively. The Asia-NWT market can be served by Japan's All Nippon Airways, which is also a member of Star Alliance.

Although these alliances can facilitate the development of new markets, a new NWT service would most likely be a charter service as opposed to a regularly scheduled one. Thus, alliances such as Star Alliance are probably not relevant for the development of new charter air services to the NWT.

Charters

In recent years there have been significant developments in the air charter industry. The key events of relevance to the Northwest Territories are summarized below.

Air Transat and Canadian Affair

Air Transat is an airline based out of Montreal, Quebec which provides both scheduled and charter air service to over 90 destinations in 25 countries. Its main destination is Europe in the summer and the Caribbean, Mexico, USA and South America in the winter.

On 14 July 2006, Transat A.T. (the parent company of Air Transat) announced that it had acquired British tour operator The Airline Seat Company (the parent company of Canadian Affair) for £20.4 million (approximately C$42.8 million). Canadian Affair was a tour operator and agent for charter flights between Canada and the UK. As a result of the acquisition, Air Transat strengthened its position in the Canada-Europe market.

Thomsonfly

Thomsonfly is a British airline that is owned by TUI AG. Currently, they offer charter service from the UK to vacation destinations throughout the world. Destinations in North America are currently limited to sun spots such as Cancun and Fort Lauderdale.

In March 2007 TUI AG agreed to merge its tourism division, excluding certain hotel assets, with First Choice Holidays. The new leisure travel group will be called TUI Travel PLC. As a result of the merger, the two airlines of the companies (Thomsonfly and First Choice Airways) will be combined and rebranded under a name that is yet to be announced.

Condor

Condor Flugdienst is a German airline based at Frankfurt International Airport with a hub at Munich International Airport. Currently, it is Germany's largest holiday airline and offers service to over 68 destinations worldwide, including Vancouver, Whitehorse and Fairbanks.

In September 2007, Air Berlin, a German low cost carrier, announced plans to buy a majority stake in Condor.

Zoom

Zoom Airlines Incorporated is a Canadian airline based out of Ottawa that offers low-fare scheduled transatlantic service. Zoom operates year-round scheduled service to the United Kingdom, France and Italy, as well as a combination of scheduled and charter services to the Caribbean and Southern United States with Canadian tour operators. On August 28, 2008 Zoom Airlines ceased all operations.

Network Carriers versus Low Cost Carriers

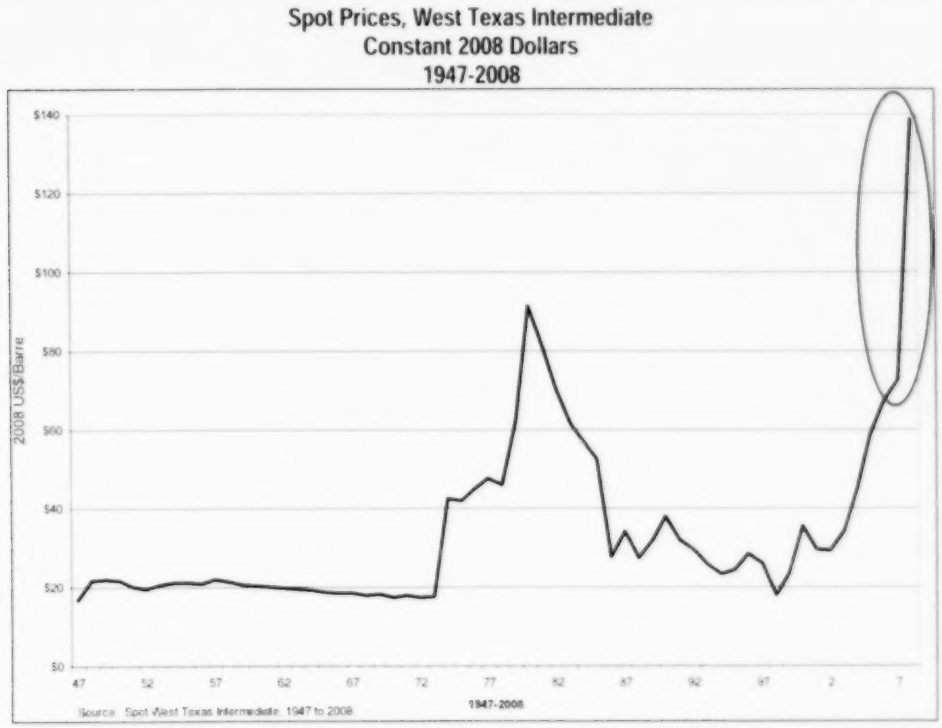
Recently the North American market, particularly the USA, has seen a large increase in the number of low cost carriers. Most importantly over the past few years, low cost carriers have been able to increase their market share significantly, to the point that they pose a serious threat to the incumbent network carriers. Low cost carriers, as the name implies, generally run a "no frills" type of operation and as a result are able to offer significantly lower airfares than the network carriers. These lower fares have a twofold effect on the market. First, the lower fare offered by the new low cost carrier stimulates market demand. This simply means that size of the market grows because the new low fares attract new customers who were unwilling to travel at the old higher price charged by the incumbent network carrier. Second, the low cost carrier takes market share away from the incumbent and in response to this threat the incumbent carrier will often lower their price which further stimulates market demand. Thus it is advantageous to have a low cost carrier enter the market because it provides lower fares for the customer and increased traffic for the market as a whole. On the other hand, there are also advantageous to having a network carrier in the market. As the name implies, network carriers are often very large and offer air service to many destinations. Thus, new service from a network carrier provides a community with improved air access to all destinations in the network.

2.3.5 State of the Airline Industry Today

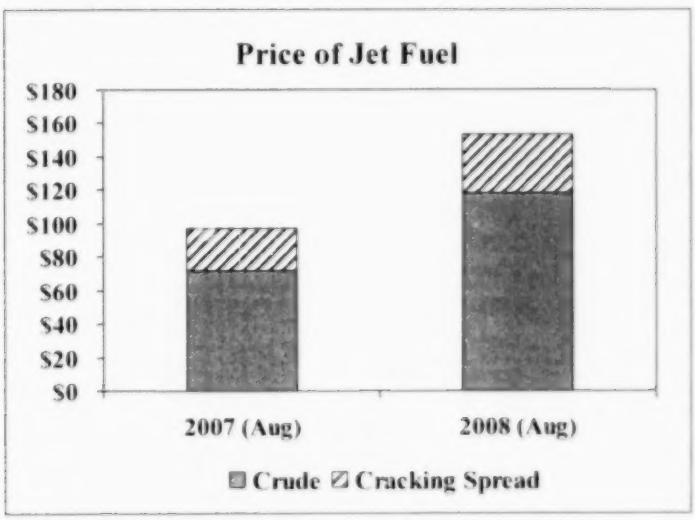
The airline industry throughout the world, and particularly in the USA, is currently facing a major challenge with the cost of jet fuel which has now become the main expense in airline operation. As a result, network carriers are downsizing by retiring aircraft, discontinuing some routes, reducing services on others, and laying off staff. It has even affected low cost carriers, who are decelerating their expansion plans. Continued high fuel costs will result in future bankruptcies and airline mergers.

2.3.5.1 Oil Prices

Last year in mid August, the price of oil was $72 per barrel whereas at present it is $118. On July 11th it hit a peak of $147/barrel. The historical level of the price of oil is shown in the graph below.



In addition to the increases in the price of a barrel of oil, the spread between the cost of jet fuel and crude oil, known as the "cracking spread", has also increased. Additional refining is required in the process of jet fuel distillation and therefore the price of jet fuel is more than regular gasoline. The differential is described in the bar charts below.



2.3.5.2 Oil Price Implications on Airlines

In the first quarter of 2008, when oil was running at $105 per barrel, the USA industry average of this expense was about 35% of airline operating costs. For network carriers labour is a higher average cost than it is for low cost carriers. This has a downward influence on the proportion that fuel costs are of the total for network carriers. This is offset, however, by, network carriers' older fleets that consume a greater amount of jet fuel than those of low cost carriers. This latter factor has an upward influence for network carriers on the proportion that jet fuel represents of their total costs. These variables suggest that there is no general rule as to how airlines will respond to fuel increases based on their cost of labour or age of aircraft. The details on the age of fleet and the proportion of total operating costs that jet fuel represents are as follows:

Airline	Average Age of Fleet (as of August 2008)	Proportion that Jet Fuel Represents of Total Airline Operating Costs (Q1 2008)
American	15.2 years	31%
Continental	10.1 years	28%
Delta	14.1 years	27%
US Airways	12.2 years	26%
Spirit	2.1 years	42%
JetBlue	3.4 years	40%
United	13.9 years	31%
Air Canada	8.9 years	26%
Southwest	13.5 years	33%
WestJet	3.5 years	32%
Air Tran	4.8 years	42%

The impact that a one-dollar increase in the price of oil has on an airline's total operating cost is as follows:

	Annual Cost Impact	
	$1/barrel increase	When oil went from $105/barrel to $115/barrel
Air Canada	$26m	$260M
Northwest	$42m	$420M
American	$80	$800M

As a result of the oil escalation, airlines are retiring older, high fuel consuming aircraft. The low cost carrier with a newer, fuel efficient fleet, are taking advantage of their situation and not reducing their operations.

One USA airline, Southwest, has hedged their price of fuel by locking in their cost of fuel over the next five years. The following is what has been protected at lower costs:

Year	Proportion of Hedged Fuel and the Fixed Price per Barrel
2008	80% at $59
2009	70% at $66
2010	40% at $81
2011	>20% at $77
2012	>20% at $76

2.3.5.3 Airline Response

Airlines are taking the following course of action as a result of increased fuel prices

- Network carriers downsizing and LCCs slowing growth
- Fuel surcharges added to ticket prices
- Airline mergers (DL/NW in process)
- Bankruptcies
- Further schedule adjustments in Fall 2008

The introduction of fuel surcharges, while possibly increasing airline revenues, will have a negative impact on the number of arriving tourists.

Specific actions taken include:

- American Airlines will reduce Q4 domestic capacity 11-12% and retire 110 aircraft. AA has reduced Puerto Rico operations alone by 45%
- United Airlines capacity reduced by 17% with 150 aircraft grounded
- Delta reducing domestic capacity by 13% in 2008
- Continental Airlines will reduce fourth quarter domestic mainline capacity by 11 percent/retire 62 aircraft
- US Airways will shrink domestic capacity in Q4 by 6-8%
- Northwest to reduce Q4 capacity by 8.5-9.5%
- Southwest deferred delivery of aircraft/retain some that would have been retired
- Air Canada cut overall capacity by 7% and transborder by 13%
- WestJet has announced no reductions at this time

2.3.5.4 Airline Case Study Example

The following is how one USA network carrier has reacted to fuel price increases over the last year, in terms of their schedule planning process:

- **August 2007 New Route Discussions** **$72/barrel**
  - Considerable interest but need further study
- **October 2007 follow-up** **$88/barrel**
  - Still interest but concern
  - Airline field trip to airport
- **December 2007** **$95/barrel**

- New Routes on hold/studying current marginal routes

- **March 2008** **$105/barrel**
  - Now reviewing whole network
- **May 2008** **$125/barrel**
  - Panic, downsizing announced

2.3.5.5 Open Skies

Open Skies is the term used to describe the air bilateral traffic right agreement between two countries that allows any designated airline of either country to exercise unrestricted flight operation between any airport in either country and beyond. These rights allow the carriers to pick up and drop off traffic between the points of an airline's route of operation. The aviation term for the ability of an airline to exercise their rights is called third, fourth and fifth freedom rights with third freedom being the ability to pick up in your own country, fourth freedom the ability to pick up in the other country and fifth freedom the ability to pick up at the other country and drop off at a third country. To exercise this last category, fifth freedom rights, there has to be an agreed bilateral allowing this by the third country.

Air bilaterals that are not Open Skies generally specify which routes might be open for operation by the designated airline of either country and possibly, in same air bilaterals, there may be restrictions on the number of flights or overall seats provided in the market. These restrictions normally apply to scheduled flight operations and not to charter services which have the freedom to serve any city pair in the two countries as long as they are certified and licensed to operate an air service. An example of a somewhat restricted air bilateral is of that between Canada and France. This agreement allows a Canadian scheduled carrier to pick up and drop off from any airport in Canada to Paris and Lyon, whereas the French-designated carrier can only serve Montreal and Toronto from any airport in France.

An example of an Open Skies air bilateral is that between Canada and the US which was signed on September 1, 2006. This treaty allows any USA airline, such as American, Untied, Delta, Continental, Southwest, etc. to fly from any city in the US to any city in Canada. For instance, United could operate a service between Denver and Yellowknife or Alaska Airlines could provide an Anchorage-Yellowknife flight. By the same token, Air Canada and WestJet can also fly between any Canadian or US city such as a Yellowknife-New York service. This Canada/US Open Skies agreement also allows American Airlines, for instance, to operate Dallas-Vancouver-Tokyo with the ability to pick up passengers in Vancouver and drop them off in Tokyo.

The US has many Open Skies agreements with countries throughout the world whereas Canada, at present, only has Open Skies with the US. However, Canada's air bilaterals with the UK and Germany are fairly liberal with the designated airlines of either country allowed to fly between cities of their choice in either country. There are some fifth freedom traffic rights in these bilaterals but they are restricted to specified routes. Canada is in the process of negotiating an Open Skies agreement with the European Union which would allow any European carrier to fly between cities in Europe and Canada.

Open Skies agreements are not that relevant to Yellowknife in that any new international overseas service would, in all likelihood, be operated as a charter service similar to Condor's Whitehorse/Anchorage operation from Germany. For the US market, the Open Skies agreement has more relevance since the likelihood of a transborder service might be equally probable for a scheduled service as it would be for a charter flight.

2.4 NWT Tourism Reports

To date a number of tourism industry studies have been conducted by or for the NWT. A summary of all relevant studies is provided below.

2.4.1 2007 Visitor Markets Strategic Overview: Northwest Territories Source: Northwest Territories Industry, Tourism and Investment

This report is the most recent and most comprehensive report currently available regarding NWT tourism.

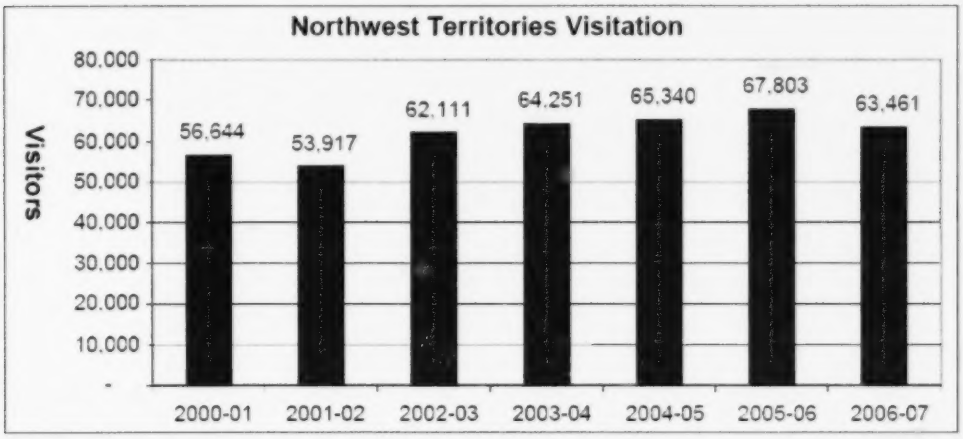
World tourism is growing. The NWT's best audiences are:

- North American "boomers"; affluent, well educated Canadians and Americans, 40 – 60 yrs old, who regularly spend $6 - $8k per person on travel, annually
- Sector-specific audiences: hunters, fishers, Japanese aurora visitors and "outfitted" outdoor adventurers
- German touring audience (Dempster highway and the Deh Cho Connection)

These audiences prefer "off the beaten path" travel that is rejuvenating and stimulating. Long-haul travel is forecast to grow worldwide by 33% through 2020. The fact that global travel is growing and that the Internet is such a big part of trip planning means global competition for the NWT.

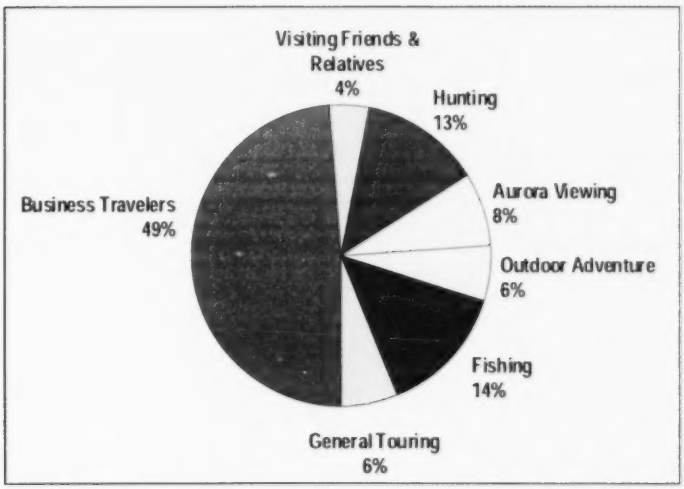
The NWT is well positioned to visitors who seek an "off the beaten path escape", a rejuvenating travel experience and a "sense of awe and wonder in natural environments". Overall, the number of NWT annual visitors has increased from 56,644 in 2000/01 to 63,461 in 2006/07 (See Figure 34).

Figure 34: Northwest Territories Visitations



Source: Government of Northwest Territories, Northwest Territories Industry, Tourism and Investment, "Visitor Markets Strategic Overview: Northwest Territories", 2007.

Figure 35: 2006/2007 Visitor Spending by Segment



Source: Government of Northwest Territories, Northwest Territories Industry, Tourism and Investment, "Visitor Markets Strategic Overview: Northwest Territories", 2007.

Japanese Aurora Tourism

There was a decline in aurora visitors in 2006/07 for the first time since 2001/02 – this can be attributed to the additional direct flights to Fairbanks, AK from Japan. Japanese NWT aurora tourism is down and under pressure. Japan is forecast to be the second-largest outbound travel market globally by 2020. However, Japanese visits to Canada are forecast to have modest or no

growth overall. With the exception of the decline in 2006/2007, the NWT has been very successful rebuilding Japanese tourism post-SARS and Japanese are now the second-largest group of visitors to the NWT (even ahead of American visitors). This market will continue to face pressure. The direct Air Canada flight from Vancouver helps, but it cannot totally offset the direct flights from Japan to Fairbanks; the strength of the Canadian dollar (cost advantage for Alaska); and the high cost of airfares to the NWT.

A comparison of Asia/Europe to Alaska/Yellowknife is provided in Section 3.1.2. With the exception of the Frankfurt winter market, current airfares for Anchorage and Fairbanks are 5% to 35% cheaper than airfares for Yellowknife. When distance is accounted for it appears that winter Tokyo/Frankfurt-Yellowknife yields (measured as cents per mile) are very similar to those of Tokyo/Frankfurt-Alaska. On the other hand, summer Tokyo/Frankfurt-Yellowknife yields are lower than Tokyo-Alaska yields and higher than Frankfurt-Alaska yields.

German Tourism

Germans are the largest outbound tourism group globally, and are expected to remain so. Germans visit the NWT for "hard" outdoor adventure and for fly/drive vacations (the Dempster highway and the Deh Cho Connection). German hunters are a potential audience; Germans remain a significant potential source for NWT visitors. Infrastructure improvements (particularly direct charter airport access) would significantly improve NWT opportunities in this segment.

Other Markets

This report also discusses Australian, Mexican, Korean and Chinese markets. One point of interest is that the Northwest Territories sent a delegation to China in September 2007 to explore building the Chinese visitor market for NWT tourism. China is currently the sixth largest outbound travel market and is expected to demonstrate rapid growth in the future.

This report also provides competitive market profiles of British Columbia, Alberta, Alaska and New Zealand.

2.4.2 2007 Restoring Canada's Growth/Yield with the Japanese Travel Market - Source: Canadian Tourism Commission

The objective of this study was to determine what is causing the decline in Japanese visitors to Canada over the past 10 years and then develop a strategy to reverse this decline. To accomplish this both qualitative and quantitative research was conducted. On the qualitative side, twelve consumer focus groups were conducted in December 2006 to gain insights into the motivations of travelers. Additionally, 30 in-depth interviews were conducted with the key travel industry personnel in both Japan and Canada. With regard to quantitative research, an online survey was conducted. The survey was completed by 3,236 Japanese travelers. The key findings of this study regarding the profile of Japanese travelers are as follows;

- The typical duration for a trip to Canada is one week
- Canada is very much a couples destination, similar to Australia

- Japanese travelers to Canada are far more likely to involve luxury hotels than those to Australia, USA or Europe
- Sightseeing was the main reason for travel for 62% of Japanese travelers to Canada
- Top activities in Canada include: seeing beautiful rivers or waterfalls, visiting wilderness areas, visiting places of historical interest, seeing old architecture, eating at a Japanese restaurant, visiting world heritage sites, seeing wildlife in their natural environment, and taking a garden or flower tour
- For travel to Canada, Japanese travelers plan their trip 22 weeks in advance and book about 10 weeks in advance of travel

The key reasons for a decline in Japanese travel to Canada are as follows;

- There has been a shift in offshore travel (towards Asia) away from traditional longer-haul destinations
- Canada is no longer considered a trendy destination, due to a decrease in TV exposure and celebrity travel
- Japanese travelers are more interested in flexible group and fully independent traveler (FIT) itineraries now as opposed to tightly controlled group tours that were more popular in the past
- The image for Canada is more about "observing" nature, not participating in it
- Canada is not attracting enough younger travelers (over 4 in 10 (40%) current visitors are age 60+, this compares to only 16% age 60+ for Australia and 18% for the USA)
- Canada is considered expensive and, according to travel industry personnel, much of the blame lies with the air carriers lack of service and high airfares

Using these findings, the report concludes by suggesting an ideal trip itinerary that should be marketed to Japanese travelers and by citing a number of actions that can be taken in order to implement the proposed strategy. These include;

- Marketing Canada as the opportunity to see and experience "big nature" that is also exceptionally safe and friendly
- Aggressively pursuing tourism retailers in Japan, especially major agencies like JTB, H.I.S., and Kintetsu
- Focusing on the prime target market of travelers over 50 years old (58% of Japanese visitors are over 50 and 44% are over 60)
- Focusing on very specific media promotions which influence Japanese travel behaviour (e.g. the very influential "World Heritage Culture" television program)
- Targeting niche markets
- Building interactive websites
- Working with other Canadian partners (e.g. two provincial tourism organizations working together)

2.4.3 2006 - 2007 Northwest Territories Aurora Visitor Survey
Source: Northwest Territories Industry, Tourism and Investment

There were 7,000 aurora visitors to the NWT in 2006-2007. The majority of aurora visitors are Japanese, and the report discusses demographics, length of stay, and average group size. Specifically, the average length of stay for Aurora travelers was 3.2 nights, with 71% of the travelers staying for three nights. Three-quarters of Aurora travelers (72%) travelled in groups of 2 or 3, with an average group size of 3.3 people.

The report states Japanese visitors' reasons for wanting to come to the NWT ("well-known for aurora viewing" was the most popular) and discusses how they heard about Yellowknife ("travel agent" was the most common). The report shows these visitors' travel preferences and other destinations, and points out that the most popular Canadian destinations visited along with the NWT are Vancouver and Niagara Falls.

Yellowknife rated quite high with most visitors, and aurora viewing also rated well as an activity. Other popular activities are discussed, including what activities people did (town tours and shopping), what activities they found most satisfying (snowmobiling and dogsledding), and what activities they would have liked to do, but didn't (flightseeing, wildlife viewing). Lowest rated services included signage and airports. The report shows how much money the average visitor spent, and what they spent it on. On average, Aurora travelers spent approximately $395 per person while in the NWT. Of that total, they spent the most on optional tours (approximately $273 per person) and the least on traditional arts and crafts ($25 per person). Furthermore, printed materials were the most popular purchase for the visitors as almost 80% of all Japanese visitors purchased some type of book, magazine or document. Additionally, in the 2003-2004 season, the majority of guests purchased carvings, however, in the 2004-2005 season, carvings were purchased the least often. The probable cause for this shift is most likely due to the fact that the data presented in this report was supplied by a different Aurora tourism operator than the data supplied in the 2003-2004 season. Souvenirs were a large purchase item for the Japanese tourists as 68% of purchases ranged from $10-$300.

2.4.4 2004 - 2005 Aurora Visitors Survey Results
Source: Northwest Territories Industry, Tourism and Investment

There were 10,245 aurora visitors in the winter of 2004-05 (mostly from Japan). This report discusses the demographics of the average Japanese visitor and notes that the 2004-05 group had different demographics and spent their money on different items (more print materials and fewer carvings) than the 2003-04 group. Ratings were similar, though, with tours and activities being rated highly, and hotels and services being rated quite low. This shows that there is need for improvement in this area. Aurora viewing rates are very high, and city tours and dogsledding were very popular activities. A potential product would be overnight dogsled tours for adventurous aurora visitors.

2.4.5 2003 - 2004 Aurora Visitors Survey Results
Source: Northwest Territories Industry, Tourism and Investment

There were 9,900 aurora visitors in the winter of 2003-04. This number is lower than the peak in 2000-01 when 13,000 Japanese visited the Northwest Territories. The number of visitors has declined since this peak as result of the negative impacts of September 11 and the SARS outbreak, nevertheless, Japanese visitors outnumbered USA visitors.

This report discusses demographics, and shows that there are more Japanese women than men coming as aurora visitors. One-quarter of aurora visitors also visited Vancouver on their NWT trip, and one-quarter also visited Niagara Falls.

Hotels and services were rated quite low and there needs to be improvement in that area. Tours and activities were rated highly; aurora viewing rates and satisfaction ratings were very high. Dogsledding is the next most popular activity; a product possibility would be overnight dogsled trips for adventurous aurora visitors. Popular purchases included carvings representative of the NWT and also Nunavut; quality souvenirs for these visitors would be a market to develop.

2.4.6 2006 Northwest Territories Visitor Exit Survey: Summary Report
Source: Northwest Territories Industry, Tourism and Investment

In summer 2006 (May 15 to September 15), 35,956 travelers visited the NWT. 28,000 were leisure travelers and 8,000 were business travelers. 77% of these travelers were from Canada, 15% were from the United States and just over 5% were from German speaking countries, including Germany, Switzerland and the Netherlands.

Wilderness and wildlife were the most common reasons stated for visiting, and word of mouth as well as the Internet were the most popular sources of travel planning. Three times as many international visitors travelled by road than air. Sightseeing, photography, shopping and wildlife viewing were the most popular activities, and all were rated highly except for shopping. Over one-quarter of visitors participated in an aboriginal activity or event. Leisure travelers spent an average of $821/person; business travelers spent $4,100/person (total spending by all visitors: $48 million). Airfare within the NWT and commercial accommodation were the two biggest costs. Visitors spent $44 million getting to the NWT.

2.4.7 2006 Northwest Territories Visitor Exit Survey: Outdoor Adventure
Source: Northwest Territories Industry, Tourism and Investment

In summer 2006, 2,079 outdoor adventurers visited the NWT (6% of total visitors). 68% of these visitors were Canadian, 22% were American, 5.2% were German-speaking Europeans and 3.5% were from other countries. The primary motivator was wilderness and isolation. Only 11% of these visitors travelled exclusively by air to the NWT. Over half of these visitors also visited Alberta or BC. The most popular activities were wildlife viewing, photography, sightseeing and shopping. Shopping was the lowest-rated activity. Air tours, rafting, canoeing and photography got the highest ratings. Guides and outfitters were rated highly, as were aboriginal events. Selection & price of arts and crafts rated poorly, as did value for money in hotels/motels. Almost 80% of German-speaking Europeans chose to go on unguided trips, which means they spent less money

than guided travelers in the NWT. Airfare within the NWT was an average of $437/guided person, and $421/unguided person.

2.4.8 2006 Northwest Territories Visitor Exit Survey: General Touring Source: Northwest Territories Industry, Tourism and Investment

In summer 2006, 13,340 general touring travelers visited the NWT. 15% of them were not from North America: this included 7.5% from Germany and 5.2% from Switzerland. 87% of all general touring visitors drive to the NWT, and more than half also visit BC, Alberta, or the Yukon. The most popular activities are sightseeing, photography, shopping and wildlife viewing. All activities were rated highly except for shopping. This study showed that 37% of these visitors participated in an aboriginal activity or event, which they rated highly. These visitors spent $14 million travelling to the NWT, and $86/person on airfare within the NWT. Airports got rated 4.2 out of 5. "Wilderness" was the biggest reason people gave for wanting to visit the NWT. These tourists spent almost $14 million getting to the NWT, and the average airfare per person within the NWT was $86.

2.4.9 2005 Tourism 2010: A Tourism Plan for the Northwest Territories Source: Northwest Territories Industry, Tourism and Investment

Starting in 2006, the Department of Industry, Tourism and Investment (ITI) will incrementally invest $1 million annually in tourism. Combined with partner investing, this should increase total tourist spending to $145 million annually by 2010.

Key Investment Areas

Outdoor Adventure: expected to increase 5.3% with investment

European tourism: expected to increase 9.6% with investment

Aurora Tours: expected to increase 6.8% with investment

Outdoor Adventure

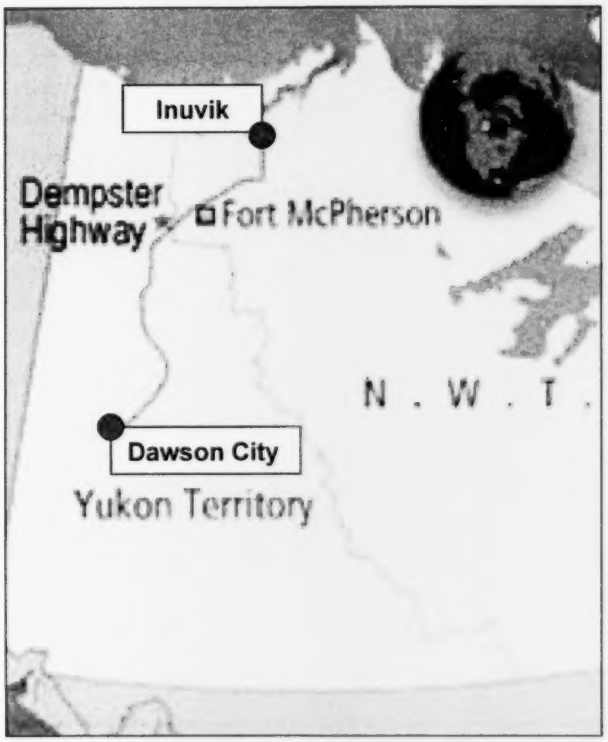
This group includes hard and soft adventurers; the NWT can provide experiences for both groups. Development of activities could make this segment a significant source of NWT tourism. With new investment, this segment should grow 5.3% a year, resulting in a value of $1.6 million in 2010.

German-Speaking Europe

Germans do a lot of long-haul travel. They have long holidays, an interest in fitness and wellness, and favourable economic conditions. The +45 age group is becoming increasingly important.

Direct flights from Germany to Whitehorse have benefited the NWT, along with a Northwest Territories Tourism agent in Austria. This flight benefits Germans who want to drive the Dempster Highway, and the high concentration of German tourists in Inuvik shows that this is a popular choice.

Figure 36: Map of Dempster Highway



The German market has a strong interest in wilderness and in aboriginal events and activities. The projected growth (with investment) of 9.6% will result in a market value of $4.7 million in 2010.

Japanese

Japanese aurora tourism is a success story. Japanese are the largest non-Canadian segment of visitors to the NWT. While the events of Sept. 11 and SARS impacted this segment, it remains a source of potential growth.

This market is particularly interested in aboriginal products, especially those involving nature.

With new investment, this segment should grow 6.8% annually, resulting in a market value of $18.85 million in 2010.

2.4.10 2005 Japanese Travel Consumer Study: An Analysis of Travel Trends and Canada's Competitive Market Position Source: Canadian Tourism Commission

The objective of this study was to conduct a survey of Japanese long-haul leisure travelers to ascertain their purchasing patterns. Specifically, the research objectives were to conduct:

- An examination of Japanese perceptions of overall price/value issues related to Canadian tourism products
- An analysis of Japanese consumers' perceptions toward package cost components in Canada and other destinations
- An analysis of trip planning and booking patterns
- A review of consumers' buying habits in terms of package tour purchases
- An analysis of consumers' purchasing patterns
- An examination of trip types being purchased
- An investigation of current challenges and opportunities for Canada in the Japanese market
- An analysis of the Canada travel brand in Japan

The key findings of this report are as follows:

- Total travel incidence rate (percentage of adult Japanese population who have taken a long-haul pleasure trip in the past three years and those who are planning such a trip in the next year) has dropped from a rate of 25.5 % in 2000 to 16.7% in 2005
- The most popular outbound destinations are Hawaii (14%) and Mainland USA (13%), followed by countries in Europe (10%) and China (8%)
- Since 1995, travel to the USA and Canada has fallen 6% and 2% respectively
- Travel to Asian destinations has increased dramatically since 2000 thus Canada now faces a much more dynamic competitive environment
- Japanese long-haul travelers are travelling more with spouses and significant others versus friends and business associates
- Since 1995 there has been a very large trend towards shorter duration long-haul pleasure trips of 4-7 nights, and away from two-week trips (in 2005, 76 percent of recent travelers trips were for 4-7 nights on most recent long-haul trips outside of Japan versus 47% in 1995)
- Throughout Japan, Canada is well known for its outdoor environment, wilderness and nature, but less so for its urban attractions; there is evidence that Canada's current brand image does not extend beyond the outdoor environment
- Due to improved economic conditions in Japan, price-related attributes are deemed to be important to potential travelers (In 2005 only 21% of respondents agreed with the statement that they are "waiting until the economy improves before taking an overseas holiday", versus 73 percent in 2000)
- The relatively high use of packaged vacation travel has remained consistent, yet the number of Japanese reporting 'group' travel has decreased
- 76% of respondents in 2005 agree that concerns about terrorism are very important factors in travel planning

2.4.11 2004 NWT Tourism Inventory and Gap Analysis Source: Northwest Territories Tourism

In 2004 an inventory and gap analysis was conducted in order to collect and analyze data on existing tourism products in the Northwest Territories. The inventory contains the following data:

- Name of tourism business
- Name of business owner
- Contact information including address, telephone number(s), fax number, e-mail address and website
- Sector of tourism industry: i.e. accommodation, food and beverage, transportation, attractions, adventure and recreation, events and conferences, travel trade, or tourism services
- Aboriginal and non-aboriginal business ownership
- Specifics related to each of the tourism sectors
- Primary and secondary products offered including;
  - Accommodations
  - Food and beverages
  - Aurora Viewing
  - Wildlife viewing
  - Nature viewing
  - Fishing
  - Cultural interpretation
  - Dogsledding
  - Hunting
- Operational seasonality
- Capacity (e.g. number of rooms for accommodation business)
- Geographical area of operation

Additionally, this report provides some general information on tourism trends in the Northwest Territories. Specifically, market trends indicate that consumers are increasingly more interested in either diversifying the tourism products bought or even potentially bundling them. Additionally, tourism trends suggest that: ecotourism, adventure and cultural tourism product segments will continue to experience growth, especially in light of the growing interest in environmental sustainability, authenticity, education and learning experiences, as well as the increasing age of the adult population.

2.4.12 2004 Industry Profile: An Integrated Approach to Nurturing Industry Development and NWT Wealth Source: Resources, Wildlife and Economic Development Government of the NWT

This report provides a detailed profile of the NWT tourism industry. In 2002/2003, it is estimated that roughly 59,000 vacationers and business travelers spent $93-million on NWT goods and services. Tourism is the territory's third largest export behind mining and petroleum products. The

report begins with some industry trends and then presents a plan for further developing the tourism industry.

The world has faced a number of unexpected events in the past couple of years, which have transformed the image of tourism and created a feeling of uncertainty among both travelers and hosts. With regards to global trends, travelers are now taking shorter duration holidays, making last-minute travel decisions, and foregoing travel agents by booking transportation and accommodations online because of a heightened cost consciousness. Additionally, tourists are also seeking more active and hands-on experiences that are unique and memorable.

At the national level, Canadian tourism has been facing challenges never before encountered. West Nile Virus, BSE-infected cattle and the Avian Influenza have plagued the industry resulting in fewer international visitors and shorter stays in Canada. Similarly, circumstances surrounding the fate of Air Canada, fluctuating exchange rates and controversial issues like the Atlantic Seal Hunt Management Program have tarnished the once pristine image of Canada. The Canadian Tourism Commission estimates that total overnight travel to the country fell by 12.9%; however, international overnight trips were forecast to increase annually by approximately 4.6% from 2004 to 2007. The number of trips and the expenditures by Americans increased steadily between 2000 and 2002. Recent studies have shown that Canadians are continuing to travel, but are choosing to stay in Canada. Spending by domestic travelers increased 3.3% reaching $35.1 billion, making up almost 67% of total tourism expenditures in 2003. Correspondingly, this demand for tourism led to the generation of 573,000 jobs across the country in 2003.

With regards to trends in the NWT tourism industry, during the 2002/2003-tourism year, visitors (including business travelers) spent $93 million in the territory. Over half of the territory's leisure visitors came from other parts of Canada, primarily Alberta, British Columbia and Ontario. During 1998/1999, the number of visitors from the United States and Japan were approximately equal at around 6,000. Since that time, the number of Americans visiting the territory has decreased slightly and the number of Japanese has increased significantly. There were serious repercussions for Japanese visitation to the NWT as a result of SARS; it is estimated that the NWT lost 1,600 Japanese visitors due to fear of SARS, compounding the negative impacts of September 11. The report then goes on to discuss general trends in each of the specific types of tourism. Of particular interest is that the NWT is an attractive location for big game hunters; mostly American, these visitors account for three per cent of leisure visitors by volume, but contribute an astounding 37% of total spending generated by non-business tourism. Summer visitors spend the least on a per-person basis compared to other leisure segments; they make up around 60% of total non-business visitation, but only account for 39% of the spending.

The report concludes by presenting a plan for further developing the NWT tourism industry. This plan calls for the following key actions;

- Creating a distinct brand image for the NWT as a travel destination
- Focusing on niche markets and markets close to home
- Continuing product development
- Improving infrastructure
- Developing and maintaining innovative partnerships

- Increasing the use of the Internet as marketing tool and a point-of-sale method
- Expanding resources for current and accurate research, product development and marketing

2.4.13 2002 Aurora Tourism: Economic Impact on the NWT Source: Resources Wildlife and Economic Development Government of the Northwest Territories

The current aurora tourism setup has capacity constraints. The NWT needs to do more marketing and needs to build infrastructure to handle the visitors. This report discusses the aurora industry and the amounts that aurora tourists spend on air travel ($423/person for the NWT portion only) and other expenses. The report discusses the benefits of tourism to the NWT. Specifically, the aurora tourist spending directly contributed $8.2 million to the GDP in winter 2001-02. Furthermore, indirect and induced activities contributed an additional $1.9 million and $3.3 million respectively. Additionally, the aurora tourism industry provides 128 direct jobs, 20 indirect jobs, and 23 induced jobs, for a total of 172 jobs.[12]

Aurora tourism is a growing, sustainable industry. The NWT needs to increase capacity to maximize the benefits from this industry. This report stresses the importance of marketing to grow this industry, and shows how much money it brings into the NWT. There is potential to develop "spin-off" activities that provide other services to this market; this would also foster economic growth in the communities.

2.4.14 2002 Visitor Exit Survey: Report on the Outdoor Adventure Segment of Visitors to the Northwest Territories Source: Resources Wildlife and Economic Development Government of the Northwest Territories

This report shows that 27% of the outdoor adventure segment coming to the NWT is non-North American (this figure is not broken down by country). This shows that the NWT is an attractive destination for overseas visitors. Half of these overseas visitors arrived in the NWT by road, half by air. While the outdoor adventure segment is small (only 7% of total NWT travel), this segment is growing and is comprised of well-educated people with high incomes who are willing to pay a lot of money for trip-specific experiences that challenge them physically. The Yukon and Nunavut are competitors for this segment as well as destinations in South and Central America. The amount spent on airfare in the NWT was the largest spending component of these travelers' trips outside the cost of getting to the territory.

[12] The number of jobs refers to the number of actual person years of employment.

2.4.15 2002 Visitor Exit Survey: Report on the General Touring Segment of Visitors to the Northwest Territories
Source: Resources Wildlife and Economic Development Government of the Northwest Territories

The general touring segment is the largest tourism segment to visit the NWT between May and August (40% of total travel). This report presents data on demographics, spending habits, and preferences of this touring segment. Only 11% of general touring visitors to the NWT are non-North Americans (this report does not break them down further into countries or regions). More non-North Americans travel by air than road. B&Bs are their choice accommodations. Services were rated fairly highly, including airports. This market is growing, is comprised mostly of well-educated older people with decent incomes, and reflects a growing interest in the North by non-North Americans.

2.4.16 2001 German Consumer Research: German Travelers
Source: Canadian Tourism Commission

In order to assess shifts in purchasing and travel patterns in the Canada-Germany travel market, an in-person survey of 1,517 German long-haul pleasure travelers was conducted in March and April of 2001. The results of this study show that there have been many striking changes in this market over the last five years. Many of these changes are closely tied to the economic weakness in Germany, the deterioration of the deutsche mark (DM) and poor consumer confidence, while others are simply a consequence of the increasing maturity of this market.

Based on the survey results, this report presents some general conclusions about market size and composition, travel patterns and trip characteristics, trip planning and decision-making, market interests and travel motivations, recent travel to Canada, potential barriers for Canada, and strengths and weaknesses of Canada. Some key findings are as follows;

- Travellers to Canada are better educated, more likely to hold managerial positions and earn higher household incomes than in the past, although this may be due to strengthening of the dollar against the DM, making travel to Canada less affordable than in the past.
- There are proportionately more long-haul travelers aged 25 to 34 (this age group accounted for 26% of all travelers in 2001 versus 19% in 1996)
- Packages are becoming more popular with most German long-haul travelers; 49 per cent of travelers used a package in 1996, this has now jumped in 2001 to 61 per cent.
- Travellers are more likely to be married with children; it is not surprising to see that more people are now bringing their families along on their long-haul vacations (in 2001 17% travelled with children, versus only 8% in 1996).
- Travellers are comfortable planning their own trips using a variety of new tools available to them, although when it comes to actually booking the trip travelers still use travel agencies.
- Aboriginal culture and nature are no longer as big a draw for German travelers as they used to be.

- Canada's general appeal in Germany is as a clean, safe place to see beautiful scenery and wondrous nature.

2.5 The Alberta / NWT Co-Operation and Development MOU

In 1998, the Governments of Alberta and the Northwest Territories signed a Memorandum of Understanding for Co-operation and Development. The agreement was extended in 2003 to October 2008. The purpose of the agreement is to promote co-operation between Alberta and the Northwest Territories for economic development in both jurisdictions. Areas covered by the agreement include resource development, transportation infrastructure, tourism and education.

Of particular interest for tourism development is that the Memorandum of Understanding (MOU) purpose and objectives are designed to work in conjunction with the existing Deh Cho Travel Connection Group, an inter-jurisdictional tourism marketing group promoting the "circle tour route" (through Alberta, the NWT, and North-eastern BC). This group is working on projects related to increasing "fly-drive" traffic, aboriginal tourism development and improving tourism-related highway signage.

A summary of the Memorandum is provided below;

Purpose:

- Develop communities, services and infrastructure of Northern Alberta and NWT
- Increase resident participation in economic life of Northern Alberta and the NWT
- Improve co-operation and planning in priority areas in Northern Alberta and the NWT
- Investigate the potential for joint development (e.g. of specific sectors)
- Investigate the potential for partnerships with the private sector

Objectives:

- Improve coordination of Alberta/NWT government programs on economic and human development
- Increase and improve provision and usage of community, regional, institutional and transportation infrastructure
- Coordinate development of human resources through training, education and youth development
- Develop strategies based on priority needs as expressed by northern residents, as well as the Governments of Alberta and the NWT
- Incorporate the principles of sustainable development into development strategies
- Respond, in a flexible and ongoing manner, to changing NWT and Northern Alberta development circumstances

Priorities:

- Review of Alberta/NWT government programs and policies to ensure maximum economic development

- Incorporation of sustainable development into plans
- Priority areas will be identified, and joint efforts will be made in those areas
- Investigation of opportunities in areas including transportation and tourism

Joint action and Cooperation:

- Both governments will agree on responsibilities and areas of focus before they sign any further agreements. They will co-operate in identifying priorities and areas of jurisdictional focus.
- Both governments will pursue discussion with a view to signing more detailed agreements where appropriate

Coordination and Implementation:

- A steering committee will be established to ensure the intent of the MOU is fulfilled
- This committee will recommend management procedures
- This extension is in effect as of Oct 17, 2003 and will be in effect until Oct 17, 2008

It should be noted that this Memorandum of Understanding is not a legally binding document, but is only a definite expression and record of the purpose and intention of the governments of Alberta and the Northwest Territories.

2.6 Stakeholder Consultations

2.6.1 Groups interviewed

In order to obtain input from local stakeholders on issues pertaining to the NWT Air Access Study, numerous interviews were undertaken. From discussions with the client a comprehensive list of 39 stakeholder organizations was developed. Of these, 38 organizations were interviewed. The list was designed to reflect the diverse range of stakeholders. It consists of governments, industry groups and a selection of impacted businesses. The stakeholders represent a cross section of local, territorial and aboriginal interests. Specific contacts are shown in Appendix 1.

Government stakeholders include:

- Federal
- Territorial
- Municipal

Industry groups include:

- The municipal Chamber of Commerce
- The territorial Chamber of Commerce
- Transportation, tourism, hospitality and outfitter industry groups

Specific businesses that were consulted include:

- Tour operators

- Scheduled airlines
- Chartered fixed-wing airlines
- Chartered rotary-wing operators
- Hotels
- Inter-modal transportation companies
- Expediters
- Couriers
- Travel agents

Of the 28 non-governmental organizations consulted, 15 have Aboriginal ownership, or if an industry organization, had Aboriginal representation on their Board.

Of the 28 non-governmental organizations consulted, 15 have offices and/or members of the Board residing outside Yellowknife.

All the interviews were conducted in January 2008. The Yellowknife Chamber of Commerce and the GNWT assisted in arranging the meetings. The Yellowknife Chamber made its meeting room available as a "neutral" location. Due to time constraints, notice was limited. However, nearly all of the targeted organizations were very accommodating and flexible, resulting in a participation rate of over 97%. Almost all organizations provided a senior representative such as the Chair, President or Vice President.

2.6.2 Study Scope

It was made clear in each interview that the study was not about an airport expansion and that the expansion study was a separate project conducted by another department of the NWT government. Nevertheless, various stakeholders provided unsolicited views on this issue. Since it is not included in the scope of this study, such views have been included in Appendix 3, and not as part of this formal report. The subject of modification to the Yellowknife Airport involving capital improvement is a separate issue.

2.6.3 Main Market Drivers

All of the participants advised that the largest portion of passenger, freight, cargo and aircraft movements to and through Yellowknife Airport were directly or indirectly related to the mining industry. This was followed by government, medical, non mining related business and northbound freight and cargo to the communities. Business travel to the NWT has increased 50% since 2000-01

2.6.4 Tourism as a Driver

Tourism to the Northwest Territories, excluding business tourism, has declined over 10% since 2005-06. Most participants observed that tourism passengers and aircraft movements, including friends and family visits, accounted for 5% or less of the demand on Yellowknife Airport.

Stakeholders reported that hunting, fishing, Aurora viewing and outdoor adventure accounted for 13,000 air passengers including 7,000 visitors from Japan in 2006-07. Various reasons were offered for the limited demand for Yellowknife Airport by tourists. These included

- limited product,
- limited tourism budgets,
- changing consumer preferences,
- distance from other attractions,
- comparative cost, and,
- the strength, marketing, budget and quality of the competition.

Over 90% of stakeholders felt that extensions of the runway would have no meaningful impact on increasing demand for the airport from the tourism or other segments, particularly because of the ability to connect to non-stop flights from the international gateways of Edmonton, Calgary and Vancouver. Stakeholders were of the view that should significant tourism or other demand arise from North America, it could be serviced either by non-stop charter jets currently capable of using the airport or by a connection using existing capacity on scheduled flights. Two examples given were:

- The majority of the fishing tourists fly non-stop on jet charters from the south directly to lodges, effectively bypassing Yellowknife.
- The numbers of meetings and conventions held in Yellowknife have been steadily increasing, while their transportation needs have been almost entirely met by existing capacity on scheduled carriers.

Some stakeholders felt that European tourism could be increased by establishing a double drop, such as summer flights to Whitehorse from Germany which could be done without modifications to the runway. The Japanese tour operators were split equally as to whether or not non-stop flights from Japan during the Aurora viewing season would result in a meaningful increase in Aurora tourists. A number of stakeholders felt that the North American market for both Aurora touring and high-end products, such as dogsledding viewing activities, were underdeveloped and represented a significant opportunity for Yellowknife using existing air services.

Japanese tourism has decreased over 30% since 2005-06 and over 45% since 2000-01. A number of stakeholders, including a major operator, were of the view that the decline in Japanese tourists to Yellowknife was due to factors other than the lack of direct flights. Many felt the implementation of the Vancouver-Yellowknife scheduled service has addressed much of the inconvenience factor. The other operator strongly believed that extending the runway to accommodate non-stop flights from Japan and other Asian points of origin would result in very significant increases in tourism to Yellowknife.

2.6.5 Natural Resource Exploration and Development as a Driver

All participants felt that the single largest potential driver for increased demand on the Yellowknife Airport would be increased mineral exploration and the construction and operation of a new mine(s). The mining and exploration industry does not foresee the need for a lengthened runway at YZF. This is because the type of aircraft the mines use will be limited by the shorter runways at the mine site and regional airports. Therefore, they do not believe that the length of runway will impact their demand for the Yellowknife Airport. Together with the expediters and carriers, the mining and exploration industry all stressed the need for:

- Space for expediters to expand at Yellowknife Airport;
- Additional apron and taxi space to accommodate more aircraft; and,
- Removing the de-icing bottle neck

to be able to meet the current and future demands on the airport from the mining and exploration industry. There was considerable frustration that these needs have not been addressed.

Most of the aircraft and passenger movements related to the mining and exploration industry do not involve the main airport terminal and therefore do not require terminal expansion. The scheduled carriers were of the view that existing space capacity is meeting the requirements of their current and foreseen passenger flights and passenger flow through the Yellowknife terminal. Charter carriers believed they needed room to expand their passenger and freight facilities where they are now located in the area of the airport to address the demand from the natural resource industry and communities.

The mining and exploration industry noted that the type of aircraft and number of movements vary with the mining cycle. Many smaller movements for fixed- and rotary-wing charters are operated during the exploration and development stage of the mining business with fewer larger aircraft utilized during the construction and operation stage. The Chamber of Mines and the GNWT foresee the development of several new mines in the service area of the Yellowknife Airport.

2.6.6 Conventions and Meetings as a Driver

Stakeholders consistently identified the next most important potential demand driver for the Yellowknife Airport as the opportunity to increase convention, meeting and incentive travel, specifically, the many small- to mid-size conventions (under 500 attendees) and meetings which are mandated to rotate around the country or region.

Stakeholders noted that this was the demand-driver that they have the most control over and which has the shortest lead time. Several studies commissioned for stakeholders, and most participants noted, that conventions, meetings and incentive travel to Yellowknife would result in increased demand for both scheduled carriers and smaller airlines serving the pre- and post-meeting tourism market.

The Hotel Association advised that they would be implementing a voluntary hotel levy to fund the marketing of conventions and meetings. Stakeholders noted that the number of visitors who list the purpose of their visit as business represent 48% of tourists, and that this group

disproportionately travels by air. This business category of tourist has increased 40% since 2000-01.

Any increase in conferences and meetings would first fill the current empty seats on air carriers to Yellowknife. Any additional requirements could be met by new flights, most likely at off-peak times. The pre- and post-market would result in increased pre- and post-event small aircraft movements from their respective hangers and boarding lounges.

2.6.7 Exports

None of the participants observed any demand for airlift services for transporting exports from the Yellowknife Airport or any of its feeder airports. Most exports are transported more economically by means other than aircraft, essentially by trucking. There are very occasional small air shipments of furs, crafts, and country foods. When these very infrequent shipments occur, they are well under a full aircraft load and are rarely repeated to the same destination.

The airline carriers pointed out that there is a great deal of unused, low-cost capacity on flights currently moving though the Yellowknife Airport to fly exports south. "There is so little demand that we currently are flying rocks and water south as ballast. We are looking at a plan to fly recyclable garbage south as ballast. Quite simply, no one is knocking on our door looking to fly things south."

Diamonds are a high value export and are exported by air; they represent a miniscule impact of air movements and are already included in existing demand. With one exception, none of the stakeholders saw any current demand or future potential for developing a NWT export that would impact demand for Yellowknife Airport.

2.6.8 Food Exports

The potential for airlifting country foods was examined. Generally, transportation economics favour land transport of harvested foods. The economics of commercializing country foods are further challenged by the costs of federal regulation when the product crosses territorial or provincial boarders, regulations around the kill and abattoir, consistent quality and the variable and seasonal availability (infrequent shipping) of the product.

Specifically, in the case of caribou, its harvest is currently restricted with no commercial harvest and the number of sports tags has been cut in half. This is expected to have a negative impact on the scheduled and chartered carrier business.

In the case of bison it has traditionally moved by truck. All commercial efforts at raising bison in the NWT have failed. Disease is now an issue south of Great Slave Lake while the non-diseased herd is now a protected resource and not available for commercial harvest.

A major constraint on the economics of the Muskox harvest is the cost of air freight. There have been less than a dozen flights exporting Muskox from the NWT since 1992. All of these have hubbed at Inuvik Airport and transferred to truck. There are occasional shipments of arctic char from the Kitikmeot which replace ballast on south bound flights that pass through Yellowknife.

Consideration was given to flying Great Slave white fish directly from the NWT to Israel in 2003. However, arrangements with the Fresh Water Fish Marketing board required this fish to be trucked to Winnipeg for processing.

2.6.9 Trans Shipments

With one exception, none of the stakeholders were aware of any inquiries or interest that would support the thesis that there was a demand for Yellowknife to serve as a transhipment point. When pressed why Yellowknife could not emulate Anchorage, several reasons were given:

- Anchorage got its start when the range of aircraft was shorter
- Anchorage airport has a duty free manufacturing park (Foreign Trade Zone) to process the goods in shipment and available skilled labour to support it
- Anchorage Airport has a much more developed infrastructure
- Anchorage airport has a long established record of international air services

Many of the stakeholders pointed to the fact that none of them were aware of any inquiries or interest from any of their extended industry networks to use Yellowknife as a transhipment location. It was noted that very rarely there are occasional shipments that are trucked from Yellowknife to Anchorage, the Great Lakes or Halifax for onward shipment. These tend to be shipments of 1000lbs and related to paid government or corporate moves.

One inter-modal carrier summed it up by making the comparison to the drive along the Alaskan Highway where there is an abandoned café and gas stations every 100 miles. "It may have been a good opportunity in the past but time and technology have moved on and the window is closed."

2.6.10 Technical Stops

Stakeholders believed that approximately 100 executive planes a year use Yellowknife as a technical stop. These planes are well serviced within existing capacity of private operators.

Very occasionally large jets are forced to declare an emergency and land in Yellowknife. Such aircraft face weight restrictions on take-off because of the length of the runway. As technical stops are something that carriers try to avoid, they are the exception and not the rule. Technical stops from large aircraft will continue on a very infrequent and irregular basis. Many stakeholders were concerned that expensive runway extensions would be made to accommodate these rare stops and that the regular Yellowknife Airport users would be required to pay for the runway extension.

2.6.11 Systemic Concerns

Many of the industry organizations, the government and corporate stakeholders expressed serious concern about the "systemic impact" of attracting more carriers to serve the high volume profitable routes between Yellowknife and southern gateways.

The resident northern scheduled carriers have traditionally provided frequent scheduled passenger and cargo jet services to the communities north of Yellowknife. The introduction of a new carrier

and additional flights on the profitable routes between Yellowknife and southern gateways has reduced prices, load factors and local carriers' financial returns.

Should a third carrier with a track record of low airfares initiate a new air service on the YZF-Alberta route, it might benefit passengers to and from Yellowknife with lower prices and more options but be detrimental to the service of the two Northern-based airlines. On the other hand it would result in the elimination, reduction or significant change in the price and availability of scheduled passenger, freight and cargo service to and from the communities served by Yellowknife

Many of the respondents volunteered that they did not want an airport authority. They felt that this was an unnecessary and costly idea that did not reflect the realities of the funding for Yellowknife Airport, that it was a territorial, not a community, airport and that it did not in reality have the same business development opportunities as successful airport authorities in the South. All of the carriers felt that an airport authority would increase costs which they would then need to pass on.

2.6.12 Threats and Opportunities to the Yellowknife Airport

Mackenzie River Bridge - stakeholders recognized that the building of a bridge over the Mackenzie River would reduce the amount of freight, cargo and passengers passing through the Yellowknife Airport during periods of winter freeze-up and spring thaw. This is particularly true of perishable freight and cargo which otherwise would be flown in during these times and can now be trucked to Yellowknife year round. Stakeholders felt that these reductions would be modest and short lived.

2.6.13 Bathurst Port and Road Project

All stakeholders were aware that the Bathurst Port and Road Project is increasingly likely to become a reality. The project was recently submitted for environmental review and has the support of the impacted groups. None of the stakeholders had studied the impact on their businesses.

Generally, it was felt that the port and road would open up a number of new base metal and gold mines north of Yellowknife and take away some of the winter road truck re-supply to the diamond mines that currently passes through Yellowknife.

A portion of winter road truck traffic would be replaced by sealift for both existing and new mines. However, there would be no impact on the movements of personnel, hot shot or perishables into or out of the mine sites. Thus, if the Port and road generate new mines over the next 6-20 years, there will be a corresponding increase in demand for airlift.

Mines are very conscious of their costs and the size of their environmental footprint. Their runways are gravel. Mines place a premium on aircraft that can use gravel and shorter runway lengths. Stakeholders envisaged that the current runway length is sufficient for any mix of aircraft required to service new mines. However there was strong support amongst expeditors, carriers and mines for expanded space for expediting operations, additional apron space and un-bottle necking of de-icing in Yellowknife

2.6.14 Mackenzie Valley Pipe Line and Oil and Gas Development

Over the next 20 years it is anticipated that oil and gas development will take place in the McKenzie Valley. This may include:

- the slow and gradual expansion or "creep" of the industry north of Alb
- the development of up to five sub-basins along the McKenzie River
- the development of the Beaufort Delta;
- the construction of the Mackenzie Valley Pipeline;
- the development of the Beaufort Offshore.

In total this development could exceed $30 billion and require the movements of large numbers of persons and supplies by air. The most advanced of these potential projects is the McKenzie Valley Pipeline which is in the permitting process.

The proponents of the project do not believe that there will be a significant impact on the Yellowknife Airport. The airports which will receive the most impact will be those that parallel the pipeline route, Fort Simpson, Norman Wells and Inuvik, with flights coming in from Edmonton and Calgary. From these airports smaller planes will carry personnel and equipment to second-tier airports along the route which will be further transported to sites via helicopter.

Should these projects proceed, it is expected that the long-haul service will be to the west of Yellowknife, paralleling the projects. It is also anticipated that a number of smaller fixed- and rotary- wing aircraft that will service the onward movement of personnel and resources to sites will relocate from Yellowknife to the McKenzie Valley. Likewise, it is expected that expediting and inter-modal facilities to support these projects will continue to develop in Hay River, Fort Simpson, Norman Wells and Inuvik

2.6.15 New Mines and Closing of Old Mines

The GNWT and NWT Chamber of Mines have identified a number of mines most likely to proceed in the next five years. For the purposes of this study, new mines with a high potential of proceeding were broken into two groups: those which would be serviced by air through Yellowknife and those which would not.

The potential new mines which will be serviced through Yellowknife are:

- DeBeers Snap Lake
- DeBeers Gahcho Kue
- Hope Bay
- Fortune Minerals
- Tyhee Gold
- Avalon

Those mines which proceed will place increased demand on Yellowknife Airport. While some of this demand will be on the passenger terminal, much of the demand will be on the expeditors, their aprons, storage, passenger lounges and operations areas. There will also be increased demand

moving a portion of the mine related workforces through the airport terminal. It is expected that all the mining requirements for air movements can be met with the current runway, however, additional apron and taxi areas and a de-bottlenecking of the de-icing process would be required.

While the redevelopment of Pine Point near Hay River, the development of Prairie Creek near Fort Simpson, and the McTung and CanTung mines on the NWT Yukon border are all advancing, none of them are close enough to Yellowknife to place any significant demand on Yellowknife Airport.

The most recent mine to cease operations is Teherra's Jericho Mine in Nunavut North of Yellowknife. The mine went into bankruptcy protection in January 2008. The reduction in demand for Yellowknife Airport may be temporary, as it will either face environmental remediation or be restarted. Of the four diamond mines serviced by the Yellowknife Airport, the Jericho Mine has involved the least number of air movements in Yellowknife as many of its air movements over-fly Yellowknife.

When a mine closes there is an extended period or remediation which may be supported by air and winter road. Currently there are several such clean-ups underway. It is reasonable to assume that this contribution to demand will remain constant over time.

3.0 Yellowknife Airport (YZF) Air Services

3.1.1 Current Air Services

Prior to the summer of 2006, Canadian North offered four non-stop flights per week between Calgary and Yellowknife while Edmonton had a total of 39 non-stop flights per week on Canadian North and First Air. In the summer of 2006, Air Canada initiated a daily 50 seat RJ flight from both Calgary and Edmonton to Yellowknife. As a result, the new Air Canada services, Canadian North discontinued its Calgary non-stop flights and decreased its Edmonton non-stop service by 2 to 3 flights per week. First Air maintained its Edmonton frequency after Air Canada arrived, up until Winter 2008 when it dropped 3 flights per week. Figure 37 shows these developments.

Figure 37: Yellowknife-Calgary/Edmonton/Vancouver Scheduled Non-Stop Air Services: 2005-2008

Route	Airline	Weekly Frequency							
		Winter 2005	Summer 2005	Winter 2006	Summer 2006	Winter 2007	Summer 2007	Winter 2008	Summer 2008*
Calgary-Yellowknife	Air Canada				7	7	14	7	14
	Canadian North	4	4	4					
Calgary-Yellowknife Total		**4**	**4**	**4**	**7**	**7**	**14**	**7**	**14**
Edmonton-Yellowknife	Air Canada				7	7	14	7	14
	Canadian North	20	20	20	21	18	17	18	18
	First Air	19	19	19	19	19	19	16	17
Edmonton-Yellowknife Total		**39**	**39**	**39**	**47**	**44**	**50**	**41**	**49**
Vancouver-Yellowknife	Air Canada							7	
Vancouver-Yellowknife Total								7	
Grand Total		**43**	**43**	**43**	**54**	**51**	**64**	**55**	**63**

** Summer 2008 figures reflect planned schedules as of January 2008 as reported in OAG and may be subject to change.*
Source: OAG Schedules, 2005-2008.

Air Canada's new Calgary/Edmonton - Yellowknife flights provided much better travel options for Yellowknife travelers in that online connections would be made on the Air Canada network of services throughout the world. Prior to this, someone from Tokyo or Frankfurt would have to make an interline connection between Air Canada and Canadian North or First Air at Calgary or Edmonton. Travellers are more comfortable with online connections than they are with interline and often, through-fares on a single carrier are better then what you can get on two airlines interlining.

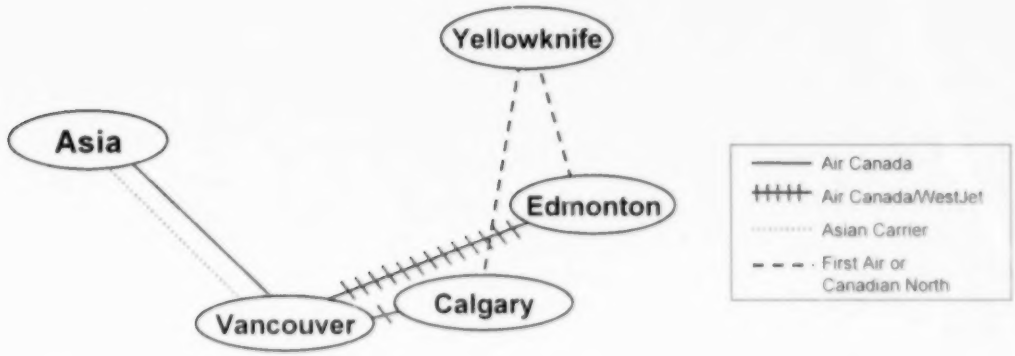
The implications of these new air services for the Asia, Europe, and USA markets are discussed below in the subsequent paragraphs.

Asia

Pre-2006

Prior to 2006 the only way of traveling from Asia to the NWT was to fly to Vancouver, on either Air Canada or one of the Asian carriers, then to either Calgary or Edmonton on Air Canada or WestJet and then travel with First Air or Canadian North from Calgary or Edmonton to Yellowknife. The diagram below depicts the travel options.

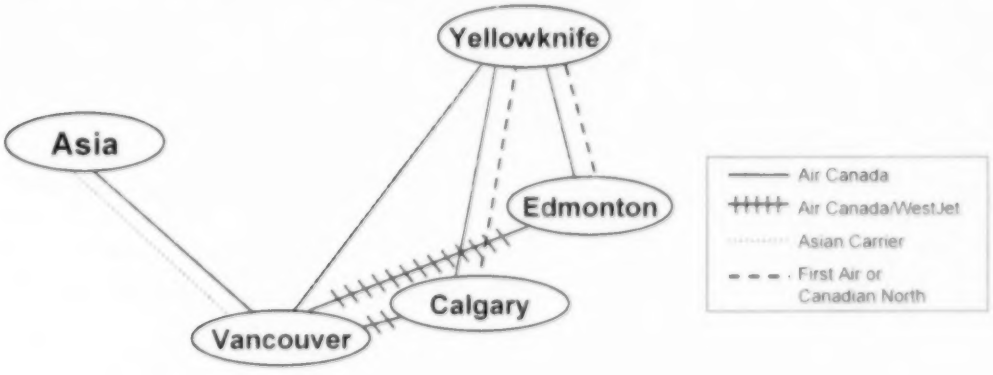
Figure 38: Pre-2006 Asia-NWT Air Service



2006-2007

In July 2006 Air Canada commenced daily service from both Edmonton and Calgary. The addition of this new service increased the number of Yellowknife-Calgary/Edmonton flights to 54 per week in July 2006 compared to 43 per week for July 2005. These new services gave Asia-Yellowknife travelers the option of completing their entire trip on only one airline (Air Canada connecting in Vancouver then either Edmonton or Calgary).

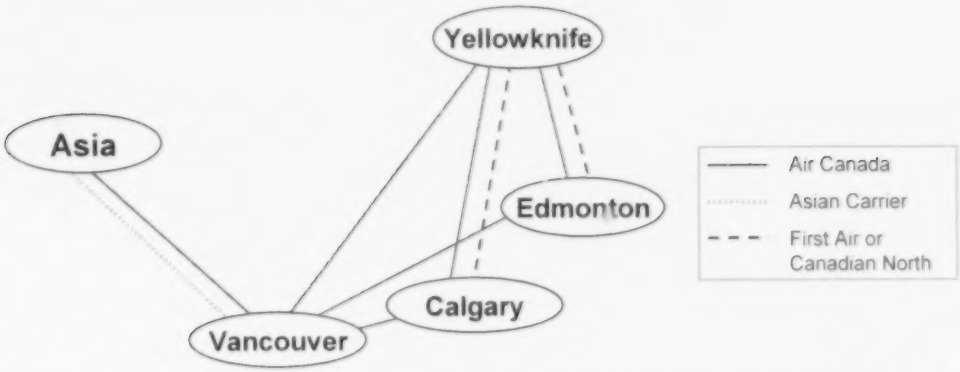
Figure 39: 2006-2007 Asia-NWT Air Service



Winter 2008

In December 2007, Air Canada introduced daily non-stop service from Vancouver to Yellowknife. This new service now provides Asia-NWT travelers with one less connection in travelling between Yellowknife and Asia.

Figure 40: Current Asia-NWT Air Service



Not only does this new Vancouver-Yellowknife service decrease the travel distance and flight time for Asia to Yellowknife, it also increases the number of Asian points of origin that are available for travel to Yellowknife using a single connection. As shown in Figure 41, Vancouver International Airport has direct service to 8 points in Asia that are not available at either Calgary International Airport or Edmonton International Airport.

Figure 41: Non-stop Destinations Served by Vancouver International Airport That Are Not Served by Calgary or Edmonton International Airports

City	Airport Code	Country
Beijing	PEK	China
Shanghai	PVG	China
Taipei	TPE	Taipei (China)
Hong Kong	HKG	Hong Kong (China)
Osaka	KIX	Japan
Tokyo	NRT	Japan
Seoul	ICN	Korea
Manila	MNL	Philippines

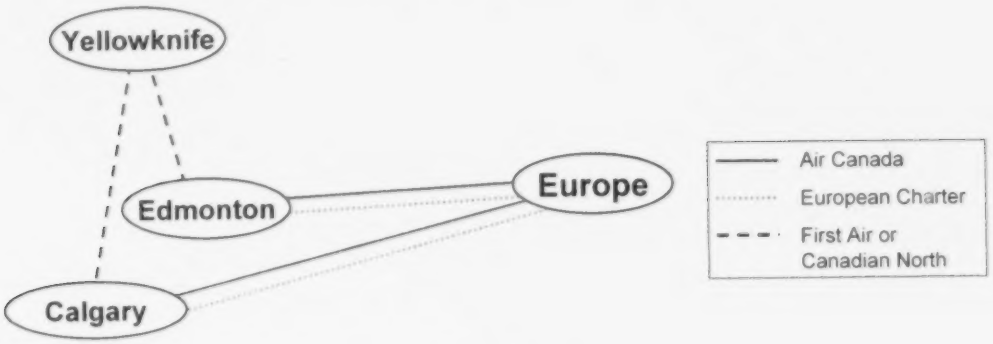
Source: OAG schedules, January 2008

Europe

Pre-2006

Prior to 2006 the only way of traveling from Europe to the NWT was to fly to either Calgary or Edmonton on Air Canada or a European carrier and then travel with First Air or Canadian North from Calgary or Edmonton to Yellowknife. The travel options are shown in Figure 42

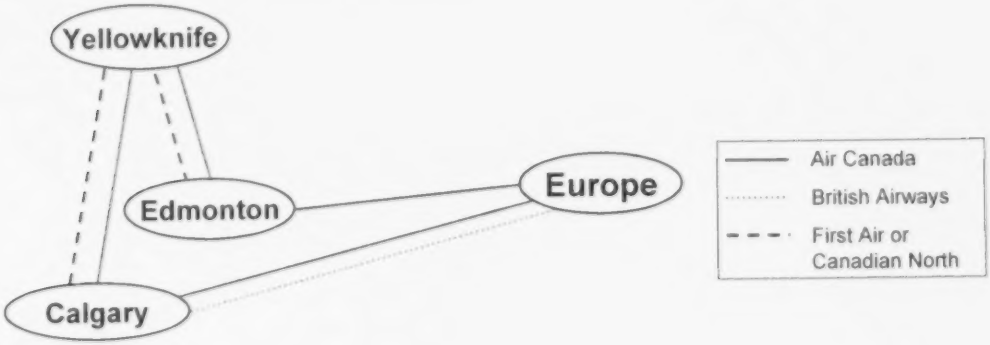
Figure 42: Pre-2006 Europe-NWT Air Service



Current

In July 2006 Air Canada commenced daily service from both Edmonton and Calgary. These new services gave Europe-Yellowknife travelers the option of completing their entire trip on only one airline (Air Canada connecting in either Edmonton or Calgary).

Figure 43: Current Europe-NWT Air Service



North America

Pre-2006

Prior to 2006 the only way of traveling from Southern Canada or the USA to the NWT was to fly to either Calgary or Edmonton on Air Canada or an American Carrier and then travel with First Air or Canadian North from Calgary or Edmonton to Yellowknife.

Current

In July 2006 Air Canada commenced daily service from both Edmonton and Calgary to Yellowknife. These new services gave USA-Yellowknife travelers the option of completing their entire trip on only one airline (Air Canada connecting in either Edmonton or Calgary).

3.1.2 Airfare Comparisons

Figure 44 provides a comparison of summer and winter airfares for travel between Asia/Europe and Alaska versus Asia/Europe and Yellowknife. With the exception of the Frankfurt winter market, current airfares for Anchorage and Fairbanks are 5% to 35% cheaper than airfares for Yellowknife. When distance is accounted for, it appears that winter Tokyo/Frankfurt-Yellowknife yields (cents/mile) are very similar to those of Tokyo/Frankfurt-Alaska. On the other hand, summer Tokyo/Frankfurt-Yellowknife yields (cents/mile) are lower than Tokyo-Alaska yields and higher than Frankfurt-Alaska yields.

Figure 44: Airfare and Yield Comparison

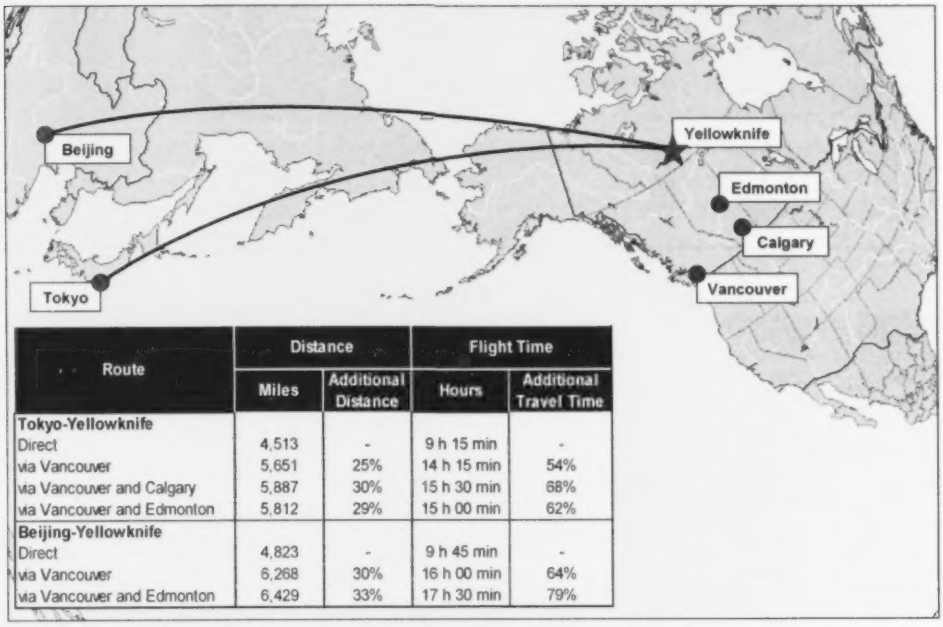
Route	Distance (miles)	Summer 2008[1]			Winter 2009[2]		
		Airline	Airfare	Yield (cents/mile)	Airline	Airfare	Yield (cents/mile)
Tokyo – Yellowknife	4,513	*Air Canada*	*$2,189*	*48.50*	*Air Canada*	*$1,782*	*39.49*
Tokyo – Anchorage	3,434	United	$1,879	54.72	Northwest/ Alaska	$1,333	*38.82*
Tokyo – Fairbanks	3,492	Northwest	$2,118	60.65	KLM/ Northwest	$1,368	*39.18*
Frankfurt – Yellowknife	4,077	*Air Canada/ Lufthansa*	*$2,222*	*54.50*	*Air Canada/ Lufthansa*	*$1,427*	*35.00*
Frankfurt – Anchorage	4,677	KLM/ Northwest	$1,425	30.47	United	$1,571	*33.59*
Frankfurt – Anchorage	4,416	KLM/ Northwest	$2,016	45.65	Delta	$1,539	*34.85*

Notes:
1. Summer travel airfare is for a July 12th, 2008 departure and a July 26th, 2008 return or the closest dates available
2. Winter travel airfare is for a January 10th, 2009 departure and a January 24th, 2008 return or the closest dates available.
Source: Orbitz.com. Search performed on April 24, 2008.

3.1.3 More Direct Yellowknife Air Service

Non-stop flights from either Asia or Europe to Yellowknife would reduce the travel distance by 25%-36% over current travel options but more importantly cut down on travel time by 34%-79%. The additional travel time is a result of the longer distance and the connection time. Non-stop flights are much more desirable than connections because delayed flights often mean missed connections that could result in overnight stays at the connecting airport, greater possibility of misplaced luggage and overall greater time of travel. Figure 45 and Figure 46 below describe the travel time for non-stop versus connections from both Asia and Europe.

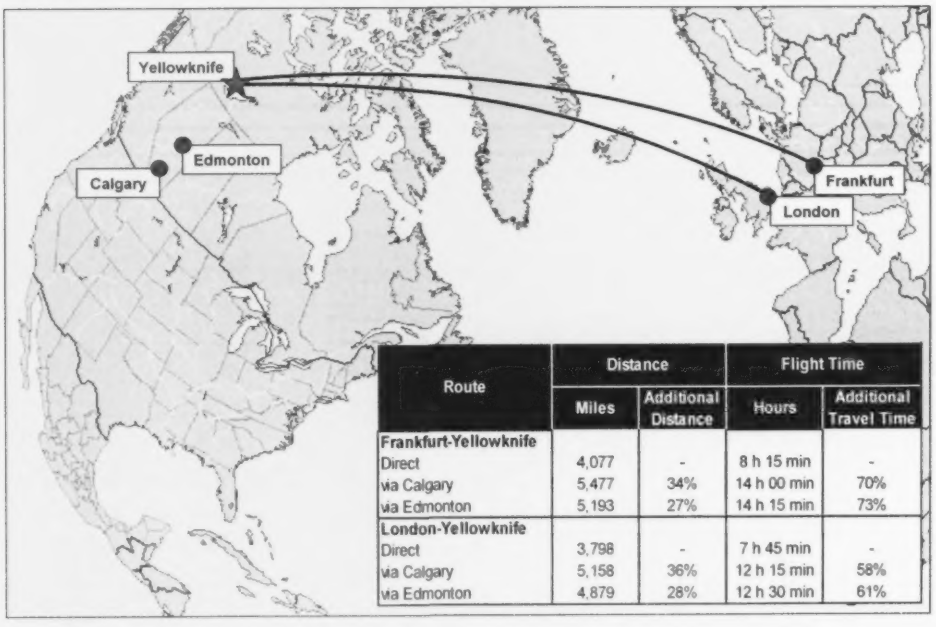
Figure 45: Comparison of Non-stop to Connecting Services: Asia-Yellowknife Flights



Route	Distance		Flight Time	
	Miles	Additional Distance	Hours	Additional Travel Time
Tokyo-Yellowknife				
Direct	4,513	-	9 h 15 min	-
via Vancouver	5,651	25%	14 h 15 min	54%
via Vancouver and Calgary	5,887	30%	15 h 30 min	68%
via Vancouver and Edmonton	5,812	29%	15 h 00 min	62%
Beijing-Yellowknife				
Direct	4,823	-	9 h 45 min	-
via Vancouver	6,268	30%	16 h 00 min	64%
via Vancouver and Edmonton	6,429	33%	17 h 30 min	79%

Source: OAG schedule, 2008

Figure 46: Comparison of Non-stop to Connecting Services: Europe-Yellowknife Flights



Route	Distance		Flight Time	
	Miles	Additional Distance	Hours	Additional Travel Time
Frankfurt-Yellowknife				
Direct	4,077	-	8 h 15 min	-
via Calgary	5,477	34%	14 h 00 min	70%
via Edmonton	5,193	27%	14 h 15 min	73%
London-Yellowknife				
Direct	3,798	-	7 h 45 min	-
via Calgary	5,158	36%	12 h 15 min	58%
via Edmonton	4,879	28%	12 h 30 min	61%

Source: OAG schedule, 2008.

3.1.4 YZF Runway Length

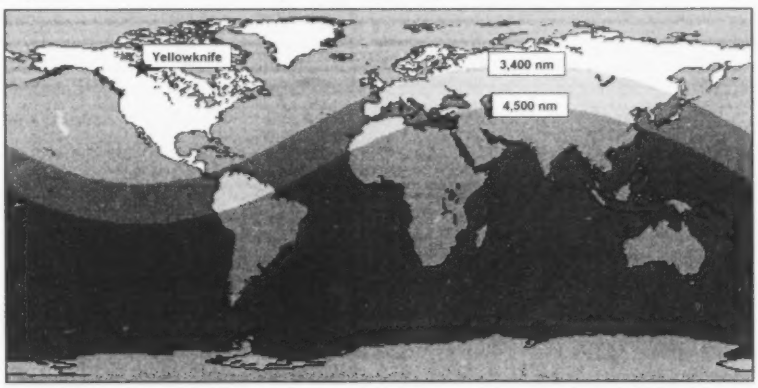
Yellowknife airport currently has a runway that is 7,500 feet long which can accommodate large aircraft such as the B747, A340 or B767 on landing but is not long enough for such aircraft to take off for any flight more than two hours in duration. Landing an aircraft requires less runway length than take-off because the aircraft has much less onboard fuel, which includes reserves, to allow the aircraft to reach an alternative airport should there be any problem in landing at the destination airport. Furthermore the braking requirement of an aircraft needs much less runway than take-off.

The take-off limitations are due to the weight of fuel required for a long-haul flight mission. For instance, a B767-300 would require a full load of fuel to fly from Yellowknife to Frankfurt. The weight of this fuel would amount to 160,000 lbs which when combined with a 75% passenger load factor, or 180 people weighing a total of 40,000 lbs, would mean the aircraft could not get off the ground with a 7,500-foot runway. The fuel required for a two-hour flight on the other hand would weigh 40,000 lbs (assuming 25% of maximum fuel capacity) and allow the B767-300 to carry the 180 passengers to an airport such as Edmonton.[13]

As shown in Figure 47 below, the range of a B767-300ER taking off from Yellowknife airport with a 75% load factor is approximately 3,400 nm.

Extending the runway to 10,000 feet would allow aircraft as big as the Airbus A330-200 to take-off for a flight to Europe. The maximum range of an A330-200 is 6,750 nautical miles (NM) although based on a number of variables it is estimated that with a 10,000-foot runway the A330-200 would have a maximum range of 4,500 nm. As shown in Figure 47, a range of 4,500 nm is more than enough to accommodate both transpacific and transatlantic flights.

Figure 47: Yellowknife Airport Range Map For Aircraft Take-Offs Only



Source: Great Circle Mapper.

[13] Calculations are based on manufacturer stated specifications for the Boeing 767-300ER as follows; maximum fuel capacity of 23,980 gallons, MTOW of 412,000 lbs, typical seat configuration of 218 (3-class), 269 (2-class), 350 (1-class).

4.0 Northern Airport Benchmarking

4.1 General Comparison

In order to better understand what the NWT, and Yellowknife in particular, provide relative to other northern airports, a review has been undertaken regarding the airports at Iqaluit, Whitehorse and Fairbanks. A summary of the key information is provided below in Figure 48. The information for each airport is separated into three subsections;

- general information, including flight frequency and seat capacity
- technical airport facility information, and
- cargo facilities

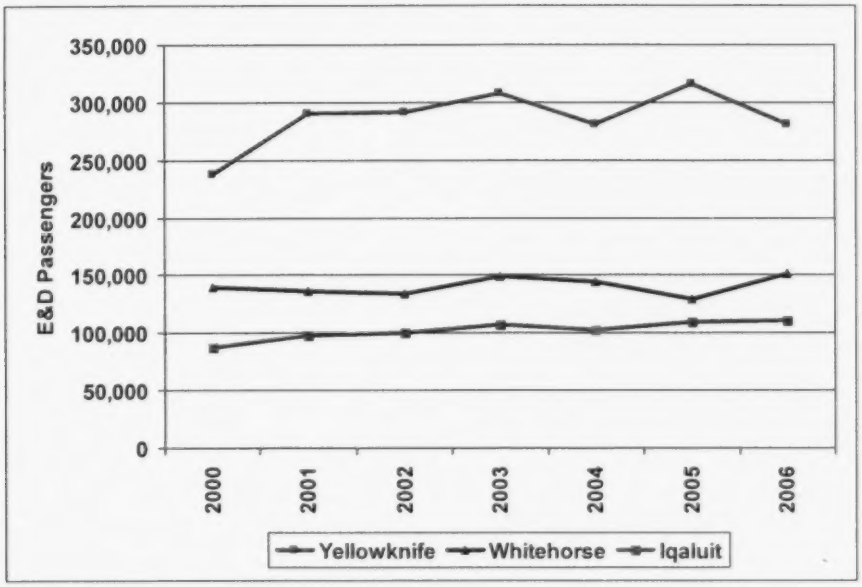
Figure 48: Northern Airport Information Summary

	Yellowknife (YZF)	Iqaluit (YFB)	Whitehorse (YXY)	Fairbanks (FAI)
Activity				
E&D Passengers[1,5]	281,305	109,999	143,207	937,500
Aircraft Movements[2]	65,969	18,654	27,525	133,267
Annual Roundtrip Seat Capacity[3]	384,744	124,010	162,882	828,094
Air Service[3]				
Number of Nonstop Destinations	20	10	10	35
Number of Airlines	8	5	4	15
Facilities[4]				
Runway Length (feet)	7,500	8,600	9,500	11,800
Terminal Size (sq. feet)	39,400	13,600	56,000	150,000
Number of Gates	3	2	3	6
Number of Check-In Positions	17	7	17	16-20
Number of Baggage Claim Belts	2	2	2	2

Sources:
1. Statistics Canada, 2006 for three Canadian airports and US DOT T100 database 2006Q4-2007Q3 for Fairbanks International Airport.
2. Statistics Canada, 2006; Fairbanks International Airport Master Record, September 2006-August 2007.
3. OAG Schedule, 2007.
4. Airport interviews.
5. Note that these numbers differ from the airport site statistics but have been used because they are a consistent base for all three Canadian airports.

The enplaned and deplaned passenger volumes for the three Canadian airports over the period of 2000 to 2006 are shown below in Figure 49.

Figure 49: Enplaned and Deplaned Passengers for Yellowknife, Whitehorse and Iqaluit, 2000-2006



Source: Statistics Canada, 2000-2006.

As can be seen in this figure, Iqaluit had the highest growth at 26% over the six-year period compared to Yellowknife at 18% and Whitehorse at 9%. At the same time, Fairbanks passenger volumes grew by 26%.

In terms of air cargo statistics, most airports do not gather this data from the airlines so it is difficult to measure how the airports compare. This is certainly true for the smaller-sized Canadian airports as well as Fairbanks. Official and up-to-date cargo statistics are therefore not available for Yellowknife Airport.

Nonetheless, consultations with Yellowknife Airport air carriers and cargo operators were conducted to obtain some information as to what cargo is flowing through Yellowknife. These consultations indicate strong growth of the cargo sector, in line with the growth of passenger and aircraft movements recorded since 2003.[14]

The amount of air cargo handled at the Yellowknife Airport in 2003 was estimated at approximately 22,800 tonnes. Based on information provided during consultations, estimated volumes in 2007 would have surpassed 32,000 tonnes, representing an overall increase of approximately 40% since 2003. The increase in cargo volumes observed at the airport would be attributed in part to strong growth in the mining and oil exploration activities in the North during this period.

[14] The following organizations provided air cargo statistics: First Air, Canadian North, Buffalo Airways, Summit Air, G&G Expediting and Braden Bury Expediting while no information was available from Arctic Southwest, Air Tindi and Discovery

Yellowknife air cargo volumes of 32,000 tonnes is a sizeable amount for an airport and community the size of Yellowknife. The following 2007 volumes show how it compares to other airports in terms of tonnes of air cargo:[15]

Anchorage:	2,825,000
Fairbanks:	n/a
Calgary:	134,250
Vancouver:	226,233

4.2 Yellowknife Airport

General Information

Located only 6 km outside the City of Yellowknife (the capital of the Northwest Territories), Yellowknife Airport is part of Canada's National Airports System and is operated by the government of the Northwest Territories. In 2006 the airport accommodated 65,969 aircraft movements and had 281,305 enplaned/deplaned passengers, making it the busiest airport in Northern Canada. The airport has on-call representation of the Canada Border Services Agency and is classified as an airport of international entry by NAV CANADA. Specifically, the airport is classified as AOE/15 making it an airport of entry for international travelers arriving by general aviation where the flights are unscheduled and the passenger capacity, including crew, does not exceed 15 people.

Currently, Yellowknife Airport is served by eight airlines and offers non-stop service to over 20 destinations, including Edmonton, Calgary and Vancouver (winter only) and 17 in the North (see Figure 50 and Figure 51).

In 2007, Yellowknife Airport supported over 9,000 regularly scheduled roundtrip passenger flights and 384,000 available roundtrip passenger seats. When compared to 2006, the number of regularly scheduled roundtrip passenger flights increased by 9.0% and the number of available roundtrip passenger seats increased by 4.6%.

[15] Source: Airports Council International and Airport websites.

Figure 50: Yellowknife Airport Non-stop Air Service Details

Airline	Destination	Weekly Outbound			
		Frequency		Seat Capacity	
		Summer 2007	Winter 2008	Summer 2007	Winter 2008
Air Canada	Calgary	14	7	700	350
	Edmonton International Apt	14	7	700	350
	Vancouver International Apt		7		350
Air Canada Total		**28**	**21**	**1,400**	**1,050**
Air Tindi Ltd	Fort Simpson	6	6	54	54
	Lac la Martre	9	9	81	81
	Rae Lakes	6	6	54	54
	Snare Lake	5	5	45	45
	Snowdrift	9	9	81	81
Air Tindi Ltd Total		**35**	**35**	**315**	**315**
Canadian North	Cambridge Bay	4	4	215	215
	Edmonton International Apt	17	18	1,972	2,088
	Gjoa Haven	3	3	99	99
	Hay River	6	6	198	198
	Kugluktuk Coppermine	6	6	198	198
	Norman Wells	7	7	812	812
	Rankin Inlet	3	3	348	348
	Taloyak	1	1	33	33
Canadian North Total		**47**	**48**	**3,875**	**3,991**
First Air	Cambridge Bay	5	4	224	178
	Edmonton International Apt	19	16	817	688
	Fort Simpson	6	6	276	276
	Gjoa Haven	5	5	230	230
	Hay River	11	11	506	506
	Inuvik	4	4	172	172
	Kugluktuk Coppermine	7	7	322	322
	Rankin Inlet	5	3	215	129
First Air Total		**62**	**56**	**2,762**	**2,501**
Northwestern Air Lease Ltd.	Fort Smith (CA)	11	11	209	209
Northwestern Air Lease Ltd. Total		**11**	**11**	**209**	**209**
North-Wright Airways Ltd.	Deline	5	5	90	90
North-Wright Airways Ltd. Total		**5**	**5**	**90**	**90**
Grand Total		**188**	**176**	**8,651**	**8,156**

Note: Buffalo Airways and Arctic Sunwest schedules are not available in OAG.
Source: OAG Schedule, July 2007 and February 2008.

Figure 51: Yellowknife Airport Route Map

Note: Buffalo Airways and Arctic Sunwest schedules are not available in OAG.
Source: OAG Schedule, February 2008.

Technical Information

Yellowknife Airport is open for operations seven days a week with the passenger building open from 4:30am to 11:30pm (but aircraft can land or take off 24h a day) and has one multi-story passenger terminal building (PTB) with 3,659 m^2 (39,400 sq. ft.) of ground floor area available to the public. The airport has 17 check-in desks, three gates, two baggage claim belts, two aircraft aprons provide an area of approximately 32,900 m^2, plus an additional 13 aprons that are maintained on privately leased lots by the airport's land tenants. Additionally, there are 10 aircraft stands and one de-icing bay.

The airport has a main terminal for scheduled flight operations and a number of terminals utilized by fixed base operators (FBOs). Yellowknife Airport has two intersecting asphalt runways. Runway 15/33, the primary runway, is 2,286 m (7,500 ft) long and 45 m (150 ft) wide and has two taxiway exits at the north end. Additionally, the runway is certified to 4C precision standards and is equipped with a Category I Instrument Landing System (ILS). Runway 09/27 is the secondary runway and is 1,524 m (5,000 ft) long and 45 m (150 ft) wide. This runway is certified to 3C non-precision standards but it is protected by Registered Zoning and by the *Airport Operations Manual* for precision operations.

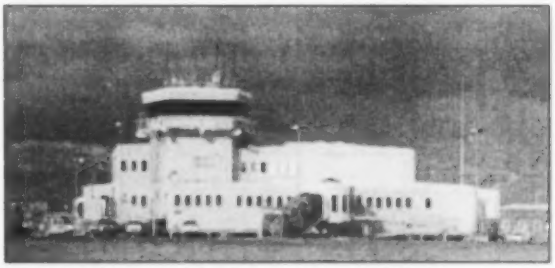
Cargo Facilities

The Yellowknife Airport currently serves as a major staging point for northern re-supply operations with significant volumes of cargo transported to a number of northern communities and remote mining sites. Currently, the airport does not possess any facilities solely dedicated to cargo although it should be noted that the majority of cargo operation are carried out by airlines and expediters who have their own cargo and passenger facilities at the airport.

4.3 Iqaluit Airport

General Information

Iqaluit Airport is located in the community of Iqaluit (the capital of the Nunavut territory) and operated by the government of Nunavut. In 2006, the airport accommodated 18,654 aircraft movements and had 109,999 enplaned/deplaned passengers. The airport has one Canada Border Services Agent on call 24 hours a day, seven days a week. Iqaluit Airport is classified as an airport of entry by NAV CANADA, specifically as AOE/15, making it an airport of entry for international travelers arriving by general aviation where the flights are unscheduled and the passenger capacity, including crew, does not exceed 15 people.



Currently, Iqaluit Airport is served by five airlines and offers non-stop service to over 10 locations including Edmonton and Ottawa. In 2007, Iqaluit Airport supported over 3,500 regularly scheduled roundtrip passenger flights and 124,000 available roundtrip passenger seats. When compared to 2006, the number of regularly scheduled roundtrip passenger flights decreased by -3.1% and the number of available roundtrip passenger seats increased by 5.6% obviously meaning the average size of aircraft in terms of seat capacity increased.

Figure 52: Iqaluit Airport Non-stop Air Service Details

Airline	Destination	Weekly Outbound			
		Frequency		Seat Capacity	
		Summer 2007	Winter 2008	Summer 2007	Winter 2008
Canadian North	Ottawa Mcdonald Cartier Intl Apt	5	5	580	580
	Rankin Inlet	3	3	348	348
Canadian North Total		**8**	**8**	**928**	**928**
First Air	Cape Dorset	5	5	230	230
	Clyde River	6	6	276	276
	Hall Beach	3	1	138	46
	Igloolik	5	5	230	230
	Kuujjuaq	3	3	129	129
	Lake Harbour	4	4	60	60
	Nanisivik	4	4	126	184
	Ottawa Mcdonald Cartier Intl Apt	7	7	301	301
	Pangnirtung	7	7	119	322
	Pond Inlet	2	1	92	46
	Rankin Inlet	3	3	129	129
First Air Total		**49**	**46**	**1,830**	**1,953**
Kenn Borek Air	Cape Dorset	6	6	90	90
	Igloolik	2	2	38	38
	Pangnirtung	6	6	90	90
Kenn Borek Air Total		**14**	**14**	**218**	**218**
Grand Total		**71**	**68**	**2,976**	**3,099**

Note: Air Nunavut schedules are not available in OAG.
Source: OAG Schedule, July 2007 and February 2008.

Figure 53: Iqaluit Airport Route Map

Note: Air Nunavut schedules are not available in OAG.
Source: OAG Schedule, February 2008.

Technical Information

Iqaluit Airport is open for operations 24 hours a day, every day of the year, and has one three-story passenger terminal building (PTB) with 1,260 m^2 (13,600 sq. ft.) of ground floor area available to the public. Additionally, the airport has seven check-in desks, two gates, two baggage claim belts four aircraft aprons and six aircraft stands.

Iqaluit Airport has one asphalt runway. Runway 17/35 is 2,621 m (8,600 ft) long and 75 m (200 ft) wide. Additionally, runway 35 is certified to 4D precision standards and is equipped with a Category I Instrument Landing System (ILS). A point of interest is that on June 1, 1996 a Virgin Atlantic Boeing 747 en route from London to Los Angeles made a successful emergency landing at Iqaluit Airport. This was the first Boeing 747 ever to attempt a landing at the airport. Furthermore, in 2006 the Airbus A380, the world's largest passenger jet, visited Iqaluit Airport to conduct cold weather testing.

Cargo Facilities

Both First Air and Canadian North have facilities at the airport devoted solely to cargo. These facilities are equipped with refrigeration, freezer and air conditioning capabilities.

4.4 Whitehorse International Airport

General Information

Located in the City of Whitehorse (the capital of the Yukon Territory), Whitehorse International Airport is part of Canada's National Airports System and is operated by the government of the Yukon Territory. In 2006 the airport accommodated 27,525 aircraft movements and had 143,207 enplaned/deplaned passengers. The airport is staffed by the Canada Border Services Agency and is classified as an airport of entry by NAV CANADA, specifically as AOE/50 making it an airport of entry for the clearance of scheduled and unscheduled air traffic where the passenger capacity, including crew, does not exceed 50 people (Note: they can handle up to 225 passengers if the aircraft is unloaded in stages).

Currently, Whitehorse Airport is served by four airlines and offers non-stop service from approximately 10 points of origin including Vancouver, Calgary and Edmonton, and Frankfurt (seasonal). In 2007, Whitehorse International Airport supported over 2,000 regularly scheduled roundtrip passenger flights and 163,000 available roundtrip passenger seats. When compared to 2006, the number of regularly scheduled roundtrip passenger flights increased by 0.8% and the number of available roundtrip passenger seats increased by 4.9%.

Figure 54: Whitehorse International Airport Non-stop Air Service Details

Airline	Destination	Weekly Outbound			
		Frequency		Seat Capacity	
		Summer 2007	Winter 2008	Summer 2007	Winter 2008
Air Canada	Vancouver International Apt	21	21	1,575	1,225
Air Canada Total		**21**	**21**	**1,575**	**1,225**
Air North	Calgary	4	3	464	348
	Dawson City	6	6	240	240
	Vancouver International Apt	7	7	812	812
Air North Total		**17**	**16**	**1,516**	**1,400**
Condor Flugdienst	Anchorage International Apt	1		269	
	Fairbanks International Apt	1		269	
Condor Flugdienst Total		**2**		**538**	
First Air	Fort Simpson	3	3	138	138
First Air Total		**3**	**3**	**138**	**138**
Grand Total		**43**	**40**	**3,767**	**2,763**

Airline	Origin	Weekly Inbound			
		Frequency		Seat Capacity	
		Summer 2007	Winter 2008	Summer 2007	Winter 2008
Air Canada	Vancouver International Apt	21	21	1,575	1,225
Air Canada Total		**21**	**21**	**1,575**	**1,225**
Air North	Dawson City	6	6	240	240
	Edmonton International Apt	4	3	464	348
	Vancouver International Apt	7	7	812	812
Air North Total		**17**	**16**	**1,516**	**1,400**
Condor Flugdienst	Frankfurt International Apt	2		538	
Condor Flugdienst Total		**2**		**538**	
First Air	Fort Simpson	3	3	138	138
First Air Total		**3**	**3**	**138**	**138**
Grand Total		**43**	**40**	**3,767**	**2,763**

Note: Both the outbound and inbound schedules are presented because Condor operates on a FRA-YXY-FAI/ANC-FRA triangle route.
Source: OAG Schedule, July 2007 and February 2008.

Figure 55: Whitehorse International Airport Route Map

Note: Service to Anchorage and Fairbanks is part of triangular Whitehorse-Frankfurt route offered by Condor.
Source: OAG Schedule, July 2008.

Technical Information

Whitehorse International Airport is open for operations seven days a week from 5 am to 1:30 am and has one three-story 5,202 m^2 (56,000 sq. ft.) passenger terminal building (PTB). Additionally, the airport has 17 check-in desks, three gates, two baggage claim belt. Furthermore, the airport has two aprons and seven aircraft stands.

Whitehorse International Airport has three asphalt runways. Runway 13R/31L, the primary runway, is 2,895 m (9,497 ft) long and 45 m (150 ft) wide. Additionally, the runway is certified to 4D precision standards and is equipped with a Category I Instrument Landing System (ILS). Runways 13RL/31R and 01/19 are secondary runways and are 1,219 m (4,000 ft) long and 24 m (80 ft) wide and 632 m (2,075 ft) long and 22.5 m (75 ft) wide.

Cargo Facilities

Currently, the airport does not possess any facilities solely dedicated to cargo. Cargo is processed in air carrier and general aviation hangers and on the two passenger terminal building (PTB) aircraft aprons.

4.5 Fairbanks International Airport

General Information

Located only 5km southwest of the town of Fairbanks, Alaska, Fairbanks International Airport is operated by the Alaska state government. Although the airport handles a relatively large number of passengers, it is mainly utilized by cargo airlines as a convenient refuelling stop for trans-polar routes. During the 12 months ending August 2007, the airport accommodated 133,267 aircraft movements. Additionally, there were 514 aircraft based at the airport, 77 of which are multi-engine aircraft. For the 12 month period of October 2006 to September 2007 the airport handled over 938,000 passengers.[16]

Currently, Fairbanks International Airport is served by approximately 13 airlines and offers non-stop service to over 35 destinations including Minneapolis/St. Paul and Salt Lake City that are operated in the summer only, essentially for the Alaska cruise ship market. In addition there are four daily flights from Seattle in the summer and two daily flights in the in the winter as well as a once weekly Condor flight in the summer only (See Figure 56 and Figure 57).

Additionally, Japan Airlines (JAL) offers chartered service to/from Tokyo during the winter and summer months. Currently, there are four customs officers stationed at the airport and when additional officers are needed they are brought in from Anchorage to assist.

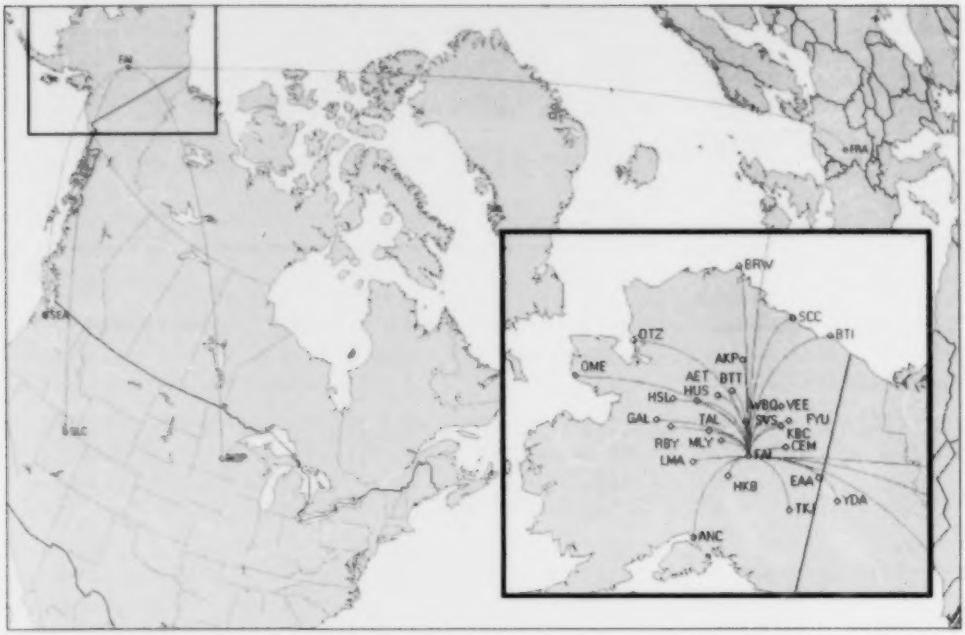
[16] Fair US DOT T100 database 2006Q4-2007Q3

Figure 56: Fairbanks International Airport Non-stop Air Service Details

Airline	Destination	Weekly Outbound			
		Frequency		Seat Capacity	
		Summer 2007	Winter 2008	Summer 2007	Winter 2008
40 Mile Air	Healy Lake	2	3	16	24
	Tok	5	3	40	24
40 Mile Air Total		**7**	**6**	**56**	**48**
Air North	Dawson City	3	3	120	120
Air North Total		**3**	**3**	**120**	**120**
Alaska Airlines	Anchorage International Apt	61	59	7,745	7,998
	Barrow Wiley Post/Will Rogers Memorial	14	7	891	1,008
	Prudhoe Bay/Deadhorse	7	14	413	826
	Seattle/Tacoma International Apt	28	14	3,948	2,128
Alaska Airlines Total		**110**	**94**	**12,997**	**11,960**
Condor Flugdienst	Frankfurt International Apt	1		269	
Condor Flugdienst Total		**1**		**269**	
Delta Air Lines	Salt Lake City	5		760	
Delta Air Lines Total		**5**		**760**	
ERA Aviation	Anchorage International Apt		21		777
ERA Aviation Total			**21**		**777**
Everts Air	Bettles	3	3	24	24
	Eagle	5	5	40	40
	Fort Yukon	3	3	24	24
	Lake Minchumina	2	2	16	16
Everts Air Total		**13**	**13**	**104**	**104**
Frontier Flying Service	Anchorage International Apt	23	18	437	342
	Barrow Wiley Post/Will Rogers Memorial	5		95	
	Barter Island	6	6	114	114
	Fort Yukon	11	11	209	209
	Galena	10	10	190	190
	Kotzebue	6	6	114	114
	Nome	5	5	95	95
	Ruby	13	13	104	104
	Tanana	3	3	57	57
Frontier Flying Service Total		**82**	**72**	**1,415**	**1,225**
Northwest Airlines	Minneapolis International Apt	14		2,520	
Northwest Airlines Total		**14**		**2,520**	
Warbelow's Air Ventures Inc	Allakaket	12	12	96	96
	Beaver	7	7	56	56
	Central	5	5	40	40
	Fort Yukon	41	20	333	165
	Galena	12	12	106	106
	Hughes	1	1	8	8
	Huslia	6	6	48	48
	Manley Hot Springs	3	3	12	12
	Ruby	6	6	48	48
	Stevens Village	6	6	24	24
	Tanana	19	19	152	152
	Venetie	1	1	4	4
Warbelow's Air Ventures Inc. Total		**119**	**98**	**927**	**759**
Wright Air Service	Allakaket	2	2	14	14
	Anaktuvuk Pass	10	10	70	70
	Bettles	10	10	70	70
	Birch Creek	5	5	35	35
	Fort Yukon	7	7	49	49
	Tanana	10	10	70	70
Wright Air Service Total		**44**	**44**	**308**	**308**
Grand Total		**398**	**351**	**19,476**	**15,301**

Source: OAG Schedule, July 2007 and February 2008.Note: Japan Airlines and Thomas Cook offer charter service to/from Fairbanks but their schedules are not available in OAG.

Figure 57: Fairbanks International Airport Route Map



Source: OAG schedule, July 2007.

In 2007, Fairbanks International Airport supported over 18,000 regularly scheduled roundtrip passenger flights and 828,000 available roundtrip passenger seats. When compared to 2006, the number of regularly scheduled roundtrip passenger flights increased by 2.2% and the number of available roundtrip passenger seats increased by 17.3%.[17]

Technical Information

Fairbanks International Airport is open for operations 24 hours a day, every day of the year and has one single level passenger terminal building (PTB) with approximately 14,000 m^2 (150,000 sq. ft.) of ground floor area. Additionally, the construction of a new terminal building is underway and is scheduled to be completed by spring 2009. Currently, the airport has between 16-20 check-in desks (depending on the configuration), six gates and two baggage claim belts. Currently, the airport has two aprons, with two distinct areas for aircraft parking located on the west apron area. Additionally, a third parking area for cargo is currently under development. The airport has nine aircraft stands with plans to have four more come online in the summer of 2008. The airport also has an area available for overflow parking in the event that all the stands are full.

Fairbanks International Airport has two parallel asphalt runways, one gravel runway and one water runway for float planes. Runway 1L/19R, the primary runway, is 3,587 m (11,800 ft) long and 45 m

[17] OAG schedules, 2006-2007

(150 ft) wide and equipped with Category I Instrument Landing System (ILS) and is certified to 4D precision standards.

Cargo Facilities

Fairbanks International Airport is used extensively by cargo airlines as a convenient refuelling stop for trans-polar routes. For the period of July 1, 2005 to June 30, 2006 the airport handled over 78 million kg (172 million pounds) of cargo.[18] Although the airport does not have any facilities dedicated to cargo storage, many of the tenants have facilities dedicated solely to cargo storage. Additionally, a number of the tenants have cargo facilities with cooling/freezing areas.

[18] Fairbanks International Airport website. http://www.dot.state.ak.us/faiiap/pdfs/comparative_statistics.pdf

4.6 Summary Air Services Beyond Local Regions

Each of the four airports has flights for their local region as well as services to outside the region. This latter type of service, when compared between the four airports, is the relevant comparison for purposes of evaluating the inbound tourism draw. This is shown in Figure 58 below:

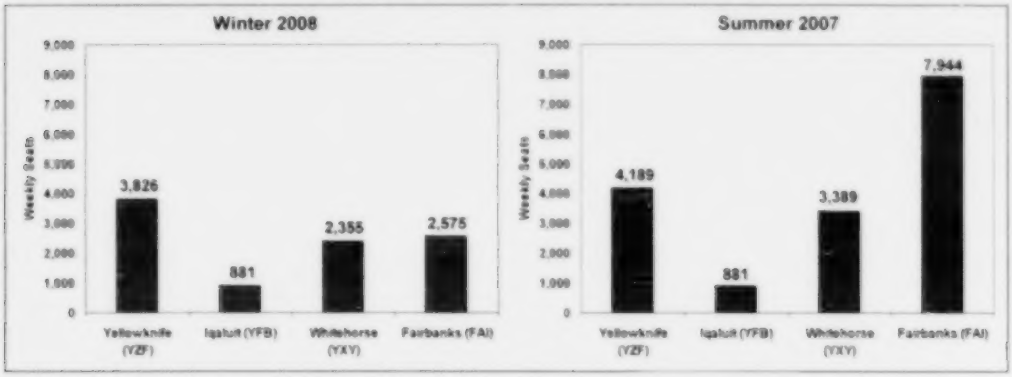
Figure 58: Northern Airports Non-Regional Air Services

Domestic or International	Weekly Outbound Nonstop Seat Capacity from:							
	Yellowknife (YZF)		Iqaluit (YFB)		Whitehorse (YXY)		Fairbanks (FAI)	
	Destination	Seats	Destination	Seats	Destination	Seats	Destination	Seats
Winter 2008								
Domestic	Edmonton	3,126	Ottawa	881	Calgary	348	Seattle	2,128
	Calgary	350	-	-	Vancouver	2,037	-	-
	Vancouver	350	-	-	-	-	-	-
	Domestic Total	3,826	Domestic Total	881	Domestic Total	2,385	Domestic Total	2,128
International	-	-	-	-	-	-	Japan*	447
Winter Total		**3,826**		**881**		**2,385**		**2,575**
Summer 2007								
Domestic	Edmonton	3,489	Ottawa	881	Calgary	464	Seattle	3,948
	Calgary	700	-	-	Vancouver	2,387	Minneapolis	2,520
	Vancouver	-	-	-	-	-	Salt Lake City	760
	Domestic Total	4,189	Domestic Total	881	Domestic Total	2,851	Domestic Total	7,228
International	-	-	-	-	Anchorage/ Frankfurt	269	Japan**	447
	-	-	-	-	Fairbanks/ Frankfurt	269	Frankfurt	269
	International Total	-	International Total	-	International Total	538	International Total	716
Summer Total		**4,189**		**881**		**3,389**		**7,944**

** Winter 2006/07 charter service of JAL (16) Narita/Nagoya/Osaka - Anchorage/Fairbanks*
*** Summer charter service of JAL (15) Narita/Nagoya/Osaka - Anchorage/Fairbanks*
Source: OAG schedules, July 2007 and February 2008.

In terms of seat capacity to places outside the region of the northern airports, Yellowknife has more seat capacity in the winter periods than that offered by the other three airports. However, in the Summer of 2007, Fairbanks had more seats because of Alaska cruise ship travelers and German charter flights. In the summer, Whitehorse also has overseas seats to Frankfurt twice per week via Anchorage or Fairbanks. The following bar chart in Figure 59 describes this relationship.

Figure 59: Northern Airports Non-Regional Seasonal Seat Capacity



Source: OAG schedules, July 2007 and February 2008

4.7 Canadian Airport Aspirations for International Air Services

Airports in Canada are particularly interested in international air services, be it transborder to/from the USA, or trans-oceanic to Europe or Asia. This section includes a description of the situation at Yellowknife and a review of other airport aspirations and their respective abilities to accommodate such flight operations. It should be noted that marketing budgets of the different airports are not publicly available while capital cost information for runway extensions and other airport upgrading is limited but included in this report where possible.

Prince George
371,000 passengers in 2006
Longest runway 7,400 ft.

Long-standing aspirations for transborder services were fulfilled in spring 2008 when Alaska Airlines started flights to Seattle. The airport is also targeting long-haul flight operations to Europe for passenger services and to Asia for cargo and technical stop flights. In order to do this the airport is in the process of extending the current runway to 11,400 feet. The runway extension is already underway and is expected to be completed by October 2008. The total budget for the project is $33 million, but the Prince George Airport Authority is currently negotiating for an additional $3 million for a total budget of $36 million.[19]

Comox
222,000 passengers in 2006
Longest runway 10,000 ft.

The airport is diligently pursuing air services to Seattle and also going after European long-haul flights. Comox already has the necessary runway length needed for Europe air services.

[19] Prince George Airport website. http://www.pgairport.ca/yxs/media/updates/index.php?cat=2&pr=27

Victoria
1,344,000 passengers in 2006
Longest runway 7,000 ft.

The airport currently has transborder services with 5-6 per day Victoria-Seattle flights by Alaska/Horizon Airlines. It also has seasonal sun destination charter services. Victoria would like longer-haul flights to the USA and in its quest to achieve this, was successful in attracting Delta for a summer Salt Lake City flight that was operated in 2007. It has also attracted United Airlines which initiated San Francisco flights in summer 2008.

Victoria also wants long-haul European charter services but has no intensions to lengthen the runway to accommodate a Victoria-Europe non-stop service. Instead it will have to work with another airport like Comox, Vancouver or Calgary, which have the necessary runway length for European non-stop flight operations.

Kelowna
1,363,000 passengers in 2007
Longest runway 7,300 ft.

Currently Kelowna has four flights per day to Seattle operated by Alaska/Horizon Airlines and may want longer haul USA flights in the future.

Kelowna would also like European charters; in order to do so the airport is extending the runway to 9,000 feet by 2008 and then to 10,000 feet by 2025.[20]

Cranbrook
89,000 passengers in 2006
Longest runway 8,000 ft.

The airport currently only has domestic flights but has aspirations for long-haul ski charters from the UK. To accommodate these services they recently (2006) extended their main runway to 8,000 feet.[21]

Calgary
11,158,000 passengers in 2006
Longest runway 12,675 ft.

The airport has extensive transborder services but probably wants more. On the international side Calgary has daily London and Frankfurt flights by Air Canada and last year British Airways started its own London service. Its current international quest is for service to Asia.

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[20] City of Kelowna International Airport Master Plan 2025 Summary Document.

[21] Canadian Rockies (Cranbrook) International Airport. http://www.flycanadianrockies.com/airstat.php.

Edmonton
5,288,000 passengers in 2006
Longest runway 11,000 ft.

Living in the shadow of Calgary for many years in terms of transborder and international air services, Edmonton was finally successful in getting Air Canada London services in the summer of 2007. It would like more and could be a partner for Yellowknife for a double drop service.

On the transborder side, Edmonton has suffered for years with airlines providing Calgary connections because passengers are already going in that direction anyway for their USA flights. Nevertheless, it has established considerable transborder air services.

Saskatoon
1,009,000 passengers in 2006
Longest runway 8,300 ft.

Currently Saskatoon is served by Northwest Airlines twice daily to Minneapolis/St. Paul but would like Western USA services as well. At present Saskatoon Airport has no apparent aspirations for Europe services due to runway limitations and the airport does not have any immediate plans for a runway extension.

Regina
914,000 passengers in 2006
Longest runway 7,900 ft.

Currently Regina faces the same situation as Saskatoon.

Winnipeg
3,590,000 passengers in 2006
Longest runway 11,000 ft.

There are transborder services to Minneapolis/St. Paul, Chicago, and Denver from Winnipeg which provide very broad coverage and access to most of the USA at three strong hub airports. At the same time the airport would like additional longer-haul USA services.

Winnipeg would like European air services and has the runway length for such flights. However, Air Canada provides extensive flight frequency between Winnipeg and Toronto and many of such flights connect to London, Paris and Frankfurt flights at Toronto. A new direct service between Winnipeg and London would have to compete with the good connecting options at YYZ.

Hamilton, Ontario
600,000 passengers in 2006
Longest runway 10,000 ft.

The airport that serves a population of some two million people was successful in attracting Flyglobespan in 2007 and has thus achieved its European aspirations with up to 21 flights per week in the first year of operation.

The airport would still like to see regular scheduled USA services but has not yet secured such flights.

Fredericton, New Brunswick
228,000 passengers in 2006
longest runway 8,000 ft.

The airport has secured a once per week charter service from London, England.

5.0 Air Travel Market Demand

The size of air travel markets is an essential part of an airline's planning process as it determines what level of flight load might be possible with any new service. Different regions and areas of Canada have better market size information than others and often several sources of such information need to be reviewed and evaluated in the process of determining market size estimates. In the case of the Northwest Territories, the following sources have been used to determine passenger market sizes (i.e., potential passengers) that might be carried on new air services.

- Visitor arrival statistics
- Federal Government air travel statistics
- Airport site statistics
- Global distribution systems (GDS) airline ticket booking data

5.1 Visitor Arrival Statistics

Visitor statistics for the NWT, which are a measure of potential air travel, are available through two main sources. The first is produced by the Government of the NWT which continuously undertakes visitor arrival surveys to determine where the visitors are coming from and the volume of such travelers. Secondly, Statistics Canada (Canada's national statistical agency) has a national survey which is administered at the major customs entry points in Canada. This research asks visitors to indicate where they are from and where they are destined to in Canada. The Federal Government survey does not measure Canadian visitors to the NWT but this is available from the NWT surveys.

Overall the number of international visitors to the NWT was approximately 36,000 in 2006 which is fairly consistent between the two data sources with one providing an estimate of 35,700 and the other 33,900 or in other words, a difference of only some 5%. Both of these surveys that are tracking total visitors include all modes of transportation as the means of travel to the NWT. This includes air travel directly into Yellowknife or a combination of air travel to Calgary or Edmonton airport and then surface transportation to NWT. These sources also include, which is particularly relevant for USA visitors, travel that involves road/drive only, all the way from the visitor's place of residence.

The specific travel volumes are shown in the table below:

Annual Visitors			Source	
Domestic	International	Total	Organization	Report Title
27,759	35,702	63,461	Government of NWT - Northwest Territories Industry, Tourism and Investment	2007 Visitor Markets Strategic Overview: Northwest Territories
n/a	33,900	n/a	Statistics Canada	2006 International Travel Survey

5.2 Government Air Travel Statistics

Statistics Canada historically has published the city-pair origin-destination air travel market sizes for travel within Canada or between Canada and the United States. However, because of the consolidation of airlines within Canada, such domestic statistics were discontinued in 2000. For the Transborder side, where there is still extensive competition and the Government of Canada and the United States have agreed to exchange the information, there are city pair statistics that continue to be publicly available. The most recent information for air travel between Canada and the United States is from 2005.

One of the shortcomings of Statistics Canada's numbers is the fact that if an air traveler takes ground transportation to an airport in a nearby community, the statistics do no pick up the true origin and destination of the traveler. For example, a resident out of Yellowknife who drives to Edmonton Airport for a flight to Los Angeles is recorded as an Edmonton - Los Angeles traveler not a Yellowknife - Los Angeles passenger.

The top 10 Yellowknife markets from both these sources are provided in the table below:

Domestic (1999)		USA (2005)	
City	Annual Passengers	City	Annual Passengers
Edmonton	25,960	Los Angeles	220
Calgary	11,600	New York/Newark	160
Vancouver	9,750	San Francisco	100
Inuvik	9,150	Minneapolis	100
Toronto	7,130	Houston	80
Ottawa	5,750	Chicago	60
Norman Wells	4,150	Dallas	40
Iqaluit	2,820	Atlanta	40
Winnipeg	2,570	Miami	40
Halifax	1,740	Grand Junction	40
Other	18,110	Other	360
Total	**98,730**	**Total**	**1,240**

5.3 YZF Site Statistics

Airport site statistics record all passengers travelling through the facility which includes:

1. Passengers arriving at Yellowknife
2. Passengers departing from Yellowknife, and
3. Passengers connecting at YZF i.e., those that are not starting or ending their trip at Yellowknife but simply passing through YZF

These airport statistics include origin/destination passengers, described elsewhere in this report and those connecting at YZF.

At YZF passengers are travelling through two essential terminal types:

1. The main airport terminal building (ATB) that involves the following airlines:
    - Air Canada
    - First Air
    - Canadian North
    - Arctic Sunwest
    - Northwestern Air
    - North-Wright Airways
2. Terminals that are separate from the ATB and owned and operated by airlines include:
    - Adlair Aviation
    - Braden-Burry Expediting Ltd.
    - First Air
    - Canadian North
    - Spur Aviation
    - Buffalo Airways
    - G&G Expediting
    - Air Tindi Ltd.
    - Nunasi Helicopters
    - Arctic Sunwest Charters
    - Great Slave Helicopters

The volume of passengers in the last two years going through the two types of YZF terminals is as follows:

	2006	2007	Change
ATB	336,000	360,908	+7.4%
All other terminals	138,800	166,262	+19.8%
Total	474,800	527,170	+11.1%

Source: Yellowknife Airport.

Overall, connectivity at YZF accounts for approximately 10% of the total passengers at YZF, meaning that approximately 474,000 were arriving at or departing from YZF.

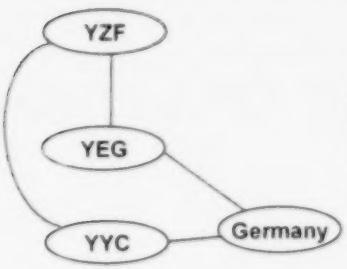
5.4 GDS Bookings

The fourth means of measuring the volume of current travelers to and from the NWT, specifically those that are using air travel as their means of transportation, is through the global distribution

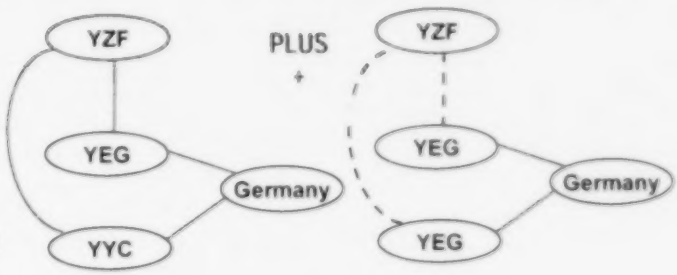
system (GDS) which is the means by which all travel agents book passengers onto airlines. This system accounts for up to 85% of overseas travel bookings and 65% of those from the USA. The residual, 15% and 35% of overseas and USA respectively, is booked through airline call centres and websites. In order to estimate the total size of the travel market, the GDS statistics therefore need to be scaled up or inflated to include that portion of passengers who are making their bookings through airline websites or call centres. Inter*VISTAS* through research, is able to determine appropriate scale up factors in order to determine the true size of the total market. Our estimates are very good for outbound travel but not as good for the inbound travelers who are flying to Calgary or Edmonton and then driving to the NWT. The source of Inter*VISTAS* scale up factors is through survey research at airports throughout Canada where a question is asked of travelers on how they made their flight booking for either domestic, USA transborder or other international air travel.

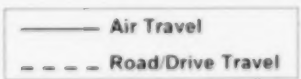
What the GDS bookings do not pick up, that the visitor surveys do, are those inbound travelers involved in a combination fly/drive itinerary. For example, a traveler from Germany to the NWT that flies to Edmonton Airport and then rents a camper or other vehicle to drive from Edmonton to Yellowknife will show up as a Germany - Edmonton passenger in GDS and not as a Germany - NWT visitor. GDS will pick up the Germany - NWT visitor if at Edmonton they are connecting onto a flight from Edmonton to Yellowknife, but not when there is ground transportation for one of the segments. The diagrams below depict this relationship.

Travellers as Measured by GDS



Travellers as Measured by Visitor Surveys





For outbound travelers GDS does pick up the legitimate NWT origin/destination travelers including those who are driving to YEG or YYC and then initiating their air travel simply because GDS recognizes residency of the traveler.

The internal NWT market which makes up the outbound component of the onboard load of airlines serving Yellowknife is fully captured through the GDS sales. It is understood that many individuals in the NWT have the time (several weeks off at a time between shifts) and incomes to travel outside the region. Making flight connections in Alberta or Vancouver would not appear to be an

overly time-consuming function and therefore it is believed that such travel is already captured in the GDS numbers.

It is also understood that many of the "2 weeks on / 2 weeks off" workers would hold a second job in Yellowknife and therefore may not have excessive travel time.

The omission of travelers who are utilizing ground transportation for a segment of their air travel is an important deficiency since, if direct flights were available, these travelers might use them. This is important information in the airline planning process. The NWT surveys have determined that up to 80% of Germans or Americans are getting to the NWT partially or wholly by ground transportation.

Total O&D passenger volumes for Yellowknife, as determined through GDS, is 448,900 for 2007. This number does not include non-revenue passengers who are either frequent flyer redemption travel, airline employee travel or that of infants under two years of age. Also, GDS shows less than 100 Germans flying to Yellowknife which means that the majority of Germans are driving to the NWT from another Canadian airport. At the same time, this source shows 7,600 Japanese passengers (one-way). This total involves the following city pair market sizes.

Rank	Within NWT and Nunavut		Between Yellowknife and:					
			Rest of Canada		US		International	
	City	Passengers	City	Passengers	City	Passengers	City	Passengers
1	Rankin Inlet	47,400	Edmonton	96,300	Salt Lake City	800	Tokyo	4,400
2	Hay River	25,600	Calgary	25,800	Los Angeles	600	Osaka	2,300
3	Inuvik	24,000	Vancouver	24,500	Denver	400	Nagoya	600
4	Kugluktuk Coppermine	23,700	Toronto	16,800	Las Vegas	300	London	400
5	Lutselk'e	22,400	Ottawa	11,200	Seattle	300	Fukuoka	300
6	Pelly Bay	16,500	Winnipeg	6,700				
7	Norman Wells	14,700	Montreal	2,800				
8	Fort Simpson	11,200	Saskatoon	2,600				
9	Cambridge Bay	6,700	Halifax	2,000				
10	Iqaluit	6,500	Victoria	1,900				
	Other	46,500	Other	20,800	Other	3,900	Other	2,000
	Total	**221,200**	**Total**	**211,400**	**Total**	**6,300**	**Total**	**10,000**
	% of Grand Total	49%		47%		1%		2%

Total O&D all markets: 448,900

5.5 Reconciliation of Air Travel Market Demand

As a result of the aforementioned drive diversion, there is some discrepancy between the passenger numbers estimated by Inter*VISTAS* and the visitor numbers reported by the Government of the NWT and by Statistics Canada for the key international markets. For the USA and Germany, the potential number of passengers (based on visitor statistics) is significantly larger than the passenger numbers estimated using the Inter*VISTAS* O&D model. This discrepancy can be explained by the fact that a large number of USA visitors travel to the NWT in the summer and simply drive up from points in the USA. Similarly, German visitors often fly to points in Canada (usually Whitehorse, Calgary or Edmonton) and then rent a vehicle and drive to the NWT. In regards to the Japanese travelers, the discrepancy between other data sources and the Inter*VISTAS* numbers is smaller than that of discrepancies found in the Germany and USA numbers. The discrepancies between the existing market size data and the Inter*VISTAS* modeled market size numbers are shown in Figure 60.

Figure 60: Market Specific NWT Visitor and Passenger Statistics

Market	Annual Visitors		Potential Annual O&D Passengers Based on Visitor Statistics[1] (Visitors x 2)		Estimated Annual O&D Passengers
	Statistics Canada[2]	Government of NWT	Statistics Canada	Government of NWT	Inter*VISTAS* O&D Model
USA	26,300	5,393	52,600	10,786	6,342
Japan	2,300	7,200	4,600	14,400	7,690
Germany	3,400	1,130	6,800	2,260	Less than 500
Other International	1,900	1,839	3,800	3,678	2,300
Total International	33,900	15,562	67,800	31,124	16,343

Notes:

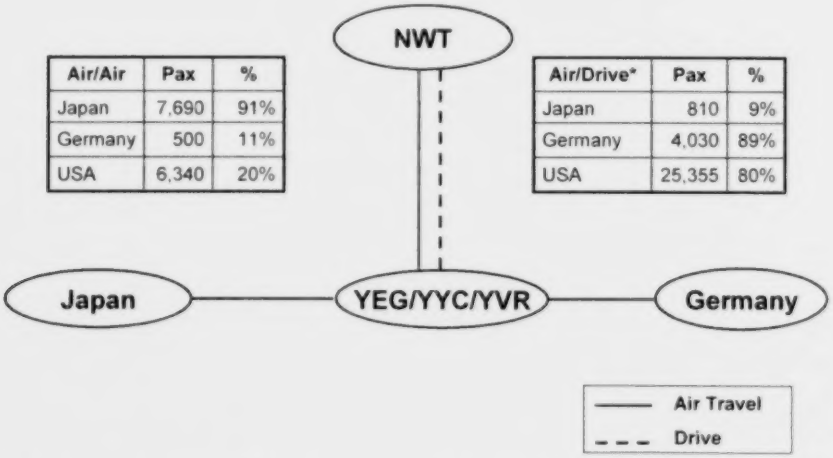
1. The Potential Annual Passengers is simply the number of visitors multiplied by two (each visitor is counted as an inbound passenger and as an outbound passenger).

2. Statistics Canada numbers are only include for reference. It should be noted that they are not considered correct by experts in the field due to the sample size being too small.

Source: Statistics Canada International Travel Survey, 2006 and Government of Northwest Territories, "Visitor Markets Strategic Overview: Northwest Territories", 2007.

If there were improved Yellowknife air services there is the potential for these new flights to capture some of the aforementioned drive traffic. Thus, when presenting market sizes to airlines, the total number of international visitors will be used as the market size because all of these visitors represent potential customers for a new air service.

The following diagram depicts the two transportation options that are deduced by the comparison of visitors to Inter*VISTAS* estimates.



** For this estimate the average of what was estimated by the NWT and Statistics Canada visitor surveys has been used.*

German tourists to the NWT can also come in through charter flights to Whitehorse then drive to the NWT.

5.6 Japan Tourism

Japanese tourism to Canada has been on the decline, although it would appear that the 150th anniversary of Anne of Green Gables in Prince Edward Island could possibly bring in additional tourists this year. It is not known if some of the other key Canadian attractions, such as Niagara Falls, the Rockies and Vancouver, will do as well. Against this background the tourists to the NWT, at some 10,000 annual visitors, might be considered appear to be doing well. It is estimated that the overall size of the Aurora viewing market is some 45,000 which leaves considerable room for NWT to increase its participants. Some comments have been made by stakeholders, however, that the NWT lacks other activities for Aurora watchers to do while in Yellowknife.

It is understood that a considerable amount of Japanese tourism has started opting for closer-in travel from Japan which can reduce trans-pacific travel and touring in Canada. Furthermore, the rising cost of fuel and its impact on disposable income for travel and the increase in airfares may further accentuate this trend. Nevertheless, the Aurora attraction for the Japanese, rumoured to be one of the three lifetime obligations of many Japanese, is a valuable market for the NWT and one that could be stimulated by direct air service.

6.0 Air Service Development Strategy

6.1 Background

The NWT has considerable air services within the region and from three southern airports (depending upon the season). The focus of this study is on air services external to the region that can possibly bring in additional tourists. As a consequence, internal services have not been reviewed in this study.

Based on current air travel market potential as so identified, the following are the areas of focus:

1. Domestic: Southern Canada to/from YZF
2. International (Overseas): Europe and Asia to/from YZF
3. Transborder: USA - YZF

The NWT is well served at YZF from Edmonton and Calgary with year-round air services of Canadian North, First Air and Air Canada. With Air Canada serving these two southern airports there is extensive connectivity that covers the major cities in Canada, some of the USA (see Section 6.3 for details) including their code-share partner United Airlines. Additionally, the Air Canada services provide air access to Europe, specifically London and Frankfurt with single connections, to Asia via Japan, and to China and Korea with double connections through Edmonton, Calgary and Vancouver. Furthermore, the seasonal Vancouver service provides single connections to Asia.

Domestic

The top three domestic markets outside the NWT, Edmonton, Calgary and Vancouver, already have non-stop air service albeit the Vancouver flights are currently seasonal. These markets account for 68% of the domestic total.

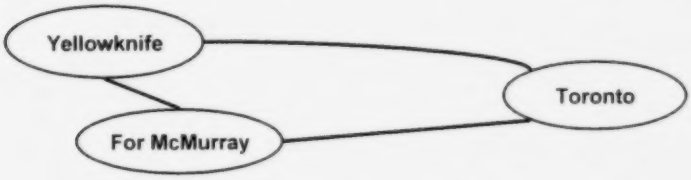
The key domestic opportunities are:

1. Vancouver year-round
2. Toronto

The fourth and fifth largest domestic markets, Toronto and Ottawa, are somewhat small on their own with the volumes between Yellowknife and these cities amounting to 23 and 15 passengers per day each way, respectively. These numbers alone are not sufficient to fill a year-round daily non-stop flight with the type of aircraft appropriate for these long-haul routes (i.e., a 120-seat A319). However, a Toronto service could become viable with local market stimulation, plus passenger contributions from connections to Ottawa, Montreal and Halifax, *plus* stimulation in each of these connecting markets of 50%. With this boost in passengers, the on-board load would be 81 passengers per flight, or an annual load factor of 68%. By narrowing the season of operations to the peak travel period, this load factor could be increased to a range acceptable to an airline.

Air Canada would be the logical choice of airline to operate this service because of their extensive network of air services at YYZ and resulting high level of connectivity potential. However, they are already capturing most of the Eastern Canada - Yellowknife passengers over Edmonton or Calgary and are normally rather reluctant to cannibalize existing services for the sake of a new flight operation.

The alternative to Air Canada is WestJet, which operates a 138-seat B737-700. On the same passenger base of 81 per flight, this would mean achievement of a 59% load factor for WestJet, well below the threshold of acceptability. To overcome this deficiency, a Yellowknife-Toronto routing that includes For McMurray could be something that WestJet might consider since they currently have an inferior Toronto-Fort McMurray product compared to that of Air Canada. In this city-pair, WestJet only offers connections over Edmonton and Calgary whereas Air Canada has a Toronto-Fort McMurray non-stop. The routing pattern for WestJet might be as follows:



It should be kept in mind that the above number of 81 passengers is a maximum potential since it assumes that all passengers from Toronto and East of Toronto would be on the flight whereas other travel options, such as connections over Edmonton or Calgary, would capture some of this market.

Vancouver is a sizable domestic air travel market averaging 34 passengers per day, each way, with the potential for Asia connectivity that contributes to the flight load on a YZF - YVR service. This service should be year round.

6.2 International

Based on the visitor surveys, there is enough demand to support the following number of charter flights if all passengers utilized the charter flights, from Germany and Japan, based on an 85% load factor on a B767-300 for Germany configured at 269 seats and a B747-400 for Japan configured at 411 seats.

Market	Market Size (One Way Passengers)	Seats of a Return Flight at 85% Load Factor	Number of Return Flights
Japan	8,500	700	12
Germany	4,530	457	10

If the higher number visitor survey results are used, which would be sourced from Statistics Canada for Germany and from NWT for Japan, the number of flights would be greater as follows:

Market	Market Size (One Way Passengers)	Seats of a Return Flight at 85% Load Factor	Number of Return Flights
Japan	14,400	700	20
Germany	6,800	457	15

Added to the airlines' flight load potential is market stimulation, which for Condor on a one-per-week Caribbean charter operation amounts to 60%. On the negative side is the fact that passengers will continue to use scheduled air services because they generally are offered on a daily basis and the day of the charter operation may not be the visitor's first choice.

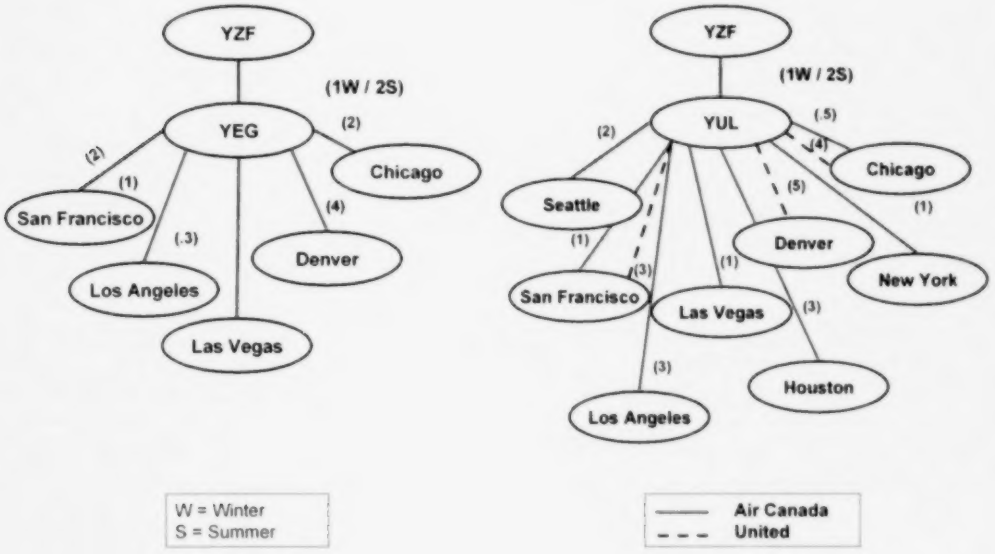
Airlines are sometimes sceptical of visitor statistics and many consider a new flight as a very risky venture that needs to be supported by a financial support package. This can be mitigated by including another partner airport that is also interested in a charter service even if it is shared with another airport. The following table describes the airport partner options.

Airport Partner Option	Interest in a YZF Spilt Charter	Whether or not a Potential Conflict	Distance to YZF (miles)
Edmonton	Have been contacted and are very interested. They currently have London scheduled service for Europe but none for Germany whereas Calgary has daily Frankfurt scheduled flights. Air Transat did operate 8 charter flights from Frankfurt in summer 2007 but Edmonton would like to see more. They are also interested in Asia since they currently have neither scheduled or charter services for Asia.	No apparent conflict	634
Calgary	Have been contacted and are very interested. They currently have daily Frankfurt service by Air Canada. In the summer of 2007 YYC had, 14 charter flights by Air Transat and 48 by Condor so don't need additional Germany services. However, for Asia they have no direct service and are anxious to get some.	No apparent conflict	785
Whitehorse	Would be very interested in working with NWT for cooperation new air services.	Could be a compatible option if passenger processing at Whitehorse with requirements of Homeland Security makes this unattractive to the charter operators	688
Fairbanks	Position not known at this time.	Airport may consider that YZF would take away some of their business because of the superior NWT Aurora product	1,028
Iqaluit	Probable interest but very small market to partner with.	No apparent conflict	1,411

6.3 Transborder (USA flights)

Online

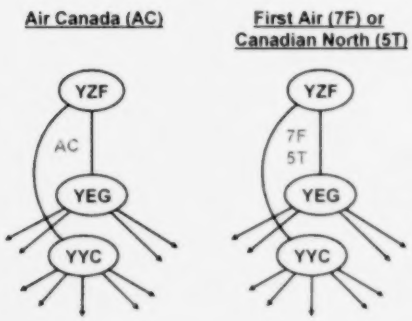
The main means of current air travel between Yellowknife and the USA involves Air Canada flights to YEG or YYC and then airline connections or Star Alliance connections on United to a number of USA cities, as depicted in the following diagram with approximate daily flight frequency shown in brackets:



Interline

The second air travel option is for interline connections at YEG and YYC between Air Canada and USA air carriers or between First Air / Canadian North for the domestic sector and USA air carriers and Air Canada for the Transborder sector:

Transborder Sector



The third option involving air travel includes drive transportation for one of the sectors and then air travel. The predominant air travel option is the Air Canada online connections which account for the majority of GDS bookings of 6,340 per annum, or nine passengers per day each way. The drive-only option that might be converted to air travel involves a market size ranging from 10,786 to 52,600 per annum depending upon the source of the information (NWT and Statistics Canada visitor surveys respectively) or 15 to 72 passengers per day, each way. The GDS or NWT numbers are very small in terms of what airlines are looking for in new route opportunities.

Air Canada would be a logical choice for a YZF to USA city air service because they already have operations at YZF, have the right sized aircraft for small sized markets and serve key USA hubs that can provide extensive connectivity for all points in the USA, particularly on the flights of their Star Alliance partner United Airlines. However, Inter*VISTAS* experience has been that Air Canada is very reluctant to cannibalize their current flights by introducing a new service. In other words, if Air Canada were to initiate a YZF-DEN service they no doubt would see seven of the passengers per day that they are currently carrying to YEG or YYC disappear to the new flight and current load factors on their Alberta flights would drop.

It is more likely that United Airlines might consider a YZF - USA service than Air Canada because they have recently being initiating new Canada - USA services (Victoria - San Francisco and Chicago/Washington D.C.- Quebec City) but here again the market would appear too challenging to get their interest. With the price of jet fuel these days, United Airlines is somewhat reluctant to initiate new flights or routes that might be high-risk.

USA network carriers have been increasingly crossing the Canada-USA border in terms of new air services because it is a more lucrative market than domestic USA, where they are challenged with higher levels of competition with the many low cost carriers such as Southwest, JetBlue, Spirit, AirTran, and Frontier. United, Delta, Continental and Northwest are the main USA carriers that are starting new Canada-USA air services.

Converting drive traffic to air traffic is more challenging for the transborder market than it is for the international market because the former, USA, involves a large component of drive-only for the entire journey whereas international at least has one sector that is currently utilising air travel.

The highest probability options, keeping in mind they are low probability overall are:

Airline	Route	Travel Time
United	YZF - Denver	3 h 36 m
Delta	YZF - Salt Lake City	3 h 36 m
Northwest	YZF - Minneapolis	3 h 22 m

The service that might be considered would be a 50-seat Regional Jet which, while appealing to the airline for the smaller seat configuration, might not be too attractive to travelers because of the considerable amount of time spent in a small aircraft. The service would probably have to be seasonal, either 2 months in the winter for Aurora viewing or Fall for hunting/fishing. The airline would have to be convinced that they could capture a good proportion of the 72 travelers per day identified by Statistics Canada and they might be sceptical of these numbers.

6.4 Summary of Airlines to Approach

The following routes and airlines should be approached for new YZF air services.

1. Domestic
   - Canadian North, First Air or Air Canada for year round Vancouver service
   - WestJet and Air Canada for Toronto via Fort McMurray
2. International
   - JAL for winter season Japan services linked to YYC or YEG
   - Condor, Air Transat and LTU for summer German services linked to YEG
3. Transborder
   - United for Denver service
   - Delta for Salt Lake City service
   - Northwest for Minneapolis-St. Paul service

7.0 Air Freight Opportunity

7.1 Current Air Cargo

Currently, the majority of freight coming into Yellowknife arrives by truck with goods going beyond to mines and communities throughout the NWT and portions of Nunavut travelling by air or in some cases additional trucking. The bulk of those goods are supplies, particularly food, which is stockpiled utilizing the most cost efficient transportation available. During the short season when the winter road is open the trucking bypasses Yellowknife.

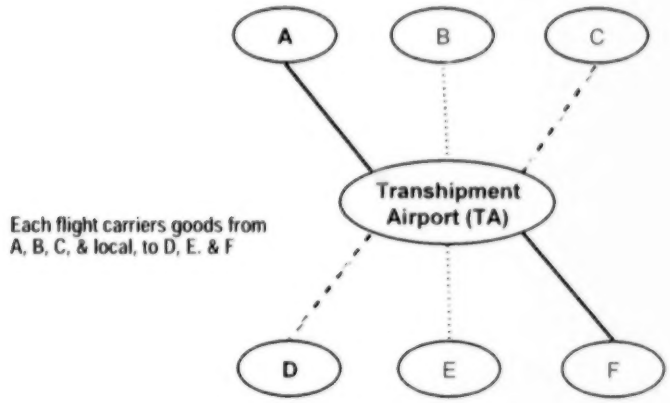
In terms of exports out of the region, there is very little that comes out of the NWT other than diamonds to Europe.

Northwest Territories International Trade - While Statistics Canada trade data tracks province or territory of origin for exports, province of destination is not recorded for imports. Unfortunately, this makes it impossible to derive imports destined for the NWT entering via other ports of clearance.

It is possible to track international exports from the Northwest Territories. According to this data, unsorted and unworked diamonds constitute the overwhelming majority of exports from the NWT to Europe and Japan by value and weight. In 2006, total exports from the NWT to Europe and Japan totalled $1.56 billion. Of this, $1.55 billion were diamond exports. The vast majority of this was to Europe (primarily Belgium and the United Kingdom) with very little to Japan.

7.2 Transhipment Opportunity

The concept of an air cargo transhipment operation is one whereby a number of flights come into an airport and cargo is transferred from one flight to another, supplemented by local cargo for a cost effective movement of the goods. The diagram below depicts this system.



This is the basis on which Anchorage operates in moving goods between Asia and the USA/Europe. This study has reviewed the international flow of goods between Europe/Japan and Alberta/Saskatchewan which could be the spokes of a transhipment operation. The size of the flow of goods between those regions is shown in the tables in Section 2.3.

It should be noted that YYC is currently well served in terms of air freight services by dedicated cargo flights as well as in the belly of combination aircraft of Air Canada and British Airways. The all-cargo flights are as follows:

Airline	International Airport	Airline Routing	Aircraft	Frequency
Cargolux	Luxemburg	70% LUX-LAX-YYC-LUX 30% LUX-GLA-SEA-YYC-LUX	B747 (400)	3 times per week
Korean	Seoul Korea	SEL-ORD-YYC-SEL	B747	2 times per week

These cargo services at YYC allow air freight to be conveniently trucked to and from Saskatchewan as well as the NWT.

7.3 Alberta/Saskatchewan International Air Cargo

The following trade data analysis uses international trade data supplied by Statistics Canada for 2006. The data includes commodity details at the HS6 level (6-digit Harmonised System product code). Entries include the following details:

- Year
- HS06 Code
- HS06 Description
- Country of Origin/Destination
- State of Origin/Destination
- Province or Territory of Origin (Exports only)
- Province or Territory of Clearance
- Port of Clearance
- Mode of Transport
- Value
- Weight in Kilograms

In addition, the HS2 level of product detail (providing a much more general grouping of commodity types) has been derived from the HS6 data.

While extensive, the data often contains errors and must be viewed carefully. For example, the database contains entries of shipments travelling by air that would be highly unlikely to have actually done so, due to extremely low value per weight of the goods and the likely absence of a need for expedited transport.[22] For this analysis, the questionable records were removed. The resulting figures should provide a reliable picture of current international trade by air.[23]

7.4 Alberta and Saskatchewan Exports to Japan and Northern Europe

7.4.1 Totals

Figure 61: Total Exports by Air from Alberta and Saskatchewan to Japan and Northern Europe, 2006

Region	Value (C$)	Weight (kg)
Japan	$46,696,550	4,231,241
Northern Europe	$398,629,822	22,116,948
TOTAL	$445,326,372	26,348,189

7.4.2 Major Product Groups

Figure 62: Major Product Groups Exported by Air from Alberta and Saskatchewan to Japan and Northern Europe, 2006

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
84	Machinery	$160,104,689	6,274,196	36.0%	23.8%
2	Meat	$30,151,811	4,401,091	6.8%	16.7%
1	Live Animals	$16,897,285	2,187,659	3.8%	8.3%
85	Electrical Machinery	$69,841,278	1,850,270	15.7%	7.0%
90	Instruments	$82,912,242	1,593,886	18.6%	6.0%
94	Furniture, lighting, prefabricated buildings	$4,321,158	1,405,304	1.0%	5.3%

[22] For example, large shipments of low-value agricultural products such as unprocessed wheat and lentils were recorded as moving by air despite the very low value per weight (under 50¢/kg). Such shipments were likely made by surface mode such as water (indeed, all other overseas shipments of these products were by water). Statistics Canada has acknowledged data entry issues with the database, so such anomalies are to be expected.

[23] All trade figures in this section represent the adjusted figures with the questionable entries removed.

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
98	Special classifications provisions	$13,325,552	1,352,889	3.0%	5.1%
73	Articles of iron or steel	$4,739,427	1,314,978	1.1%	5.0%
30	Pharmaceuticals	$7,839,068	1,245,640	1.8%	4.7%
49	Printed material	$10,346,735	1,226,273	2.3%	4.7%
Other		44,847,127	3,496,003	10.1%	13.3%
TOTAL		**445,326,372**	26,348,189	100.0%	100.0%

Figure 63: Major Product Groups Exported by Air from Alberta and Saskatchewan to Japan only, 2006

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
1	Live Animals	$16,070,005	2,110,627	34.4%	49.9%
2	Meat	$10,907,890	1,180,292	23.4%	27.9%
85	Electrical Machinery	$5,709,712	299,170	12.2%	7.1%
84	Machinery	$3,161,440	152,126	6.8%	3.6%
15	Animal or vegetable waxes and fats	$119,961	67,945	0.3%	1.6%
90	Instruments	$4,713,118	63,605	10.1%	1.5%
87	Vehicles and parts	$246,986	60,307	0.5%	1.4%
39	Plastics and articles thereof	$132,979	36,143	0.3%	0.9%
20	Preparations of vegetables, fruits, nuts, etc.	$37,937	36,000	0.1%	0.9%
41	Raw hides, skins, leather	$27,434	27,429	0.1%	0.6%
Other		$5,569,088	197,597	11.9%	4.7%
TOTAL		$46,696,550	4,231,241	100.0%	100.0%

Figure 64: Major Product Groups Exported by Air from Alberta and Saskatchewan to Northern Europe, 2006

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
84	Machinery	$156,943,249	6,122,070	39.4%	27.7%
2	Meat	$19,243,921	3,220,799	4.8%	14.6%
85	Electrical Machinery	$64,131,566	1,551,100	16.1%	7.0%
90	Instruments	$78,199,124	1,530,281	19.6%	6.9%
94	Furniture, lighting, prefabricated buildings	$4,152,410	1,379,415	1.0%	6.2%
98	Special classifications provisions	$13,294,102	1,347,605	3.3%	6.1%
73	Articles of iron or steel	$4,687,930	1,303,793	1.2%	5.9%
30	Pharmaceuticals	$7,184,331	1,239,056	1.8%	5.6%
49	Printed material	$10,334,711	1,225,026	2.6%	5.5%
87	Vehicles and parts	$9,717,475	653,011	2.4%	3.0%
Other		$30,741,003	2,544,792	7.7%	11.5%
TOTAL		$398,629,822	22,116,948	100.0%	100.0%

7.4.3 Top Commodities

Note: nes = not elsewhere specified

Figure 65: Top 25 Commodities Exported by Air from Alberta and Saskatchewan to Japan and Northern Europe, 2006

HS6 Code	Description	Value (C$)	Weight (kg)
20500	Horse, ass, mule or hinny meat, fresh, chilled or frozen	$24,838,193	3,565,879
10190	Horses, asses, mules and hinnies, live, except pure-bred breeding	$15,522,883	2,053,257
940600	Prefabricated buildings	$3,209,334	1,236,286
300590	Dressings & similar articles, impreg or coated or packaged for med use, nes	$6,557,505	1,225,512

HS6 Code	Description	Value (C$)	Weight (kg)
490700	Unused postage, revenue stamps; cheque forms, banknotes, bond certificates, etc	$9,636,491	1,111,985
843143	Parts of boring or sinking machinery, whether or not self-propelled	$14,539,999	1,025,868
981000	Contractors equip to be ret'd to Can or re-exp after completion of contract	$10,107,760	812,279
901590	Parts and accessories for use with the apparatus of heading No 90.15	$31,192,980	765,163
847990	Parts of machines & mechanical appliances nes having individual functions	$11,334,593	645,743
848180	Taps, cocks, valves and similar appliances, nes	$8,873,344	581,020
980610	Settlers'/migrants' personal & household effects valued at $2000 Cdn or more	$3,202,101	537,973
841290	Parts of hydraulic & pneumatic & other power engines and motors nes	$7,780,464	502,710
870899	Motor vehicle parts nes	$1,898,714	482,993
20130	Bovine cuts boneless, fresh or chilled	$4,016,696	419,885
732690	Articles, iron or steel, nes	$1,441,586	415,064
840991	Parts for spark-ignition type engines nes	$1,843,108	363,316
853810	Boards, panels, etc for goods of heading 85.37, not equipped with their app	$3,987,430	343,629
990100	Low value export transactions and confidential commodities	$1,293,858	300,644
730410	Pipes, line, iron or steel, smls, of a kind used for oil or gas pipelines	$452,752	299,497
841391	Parts of pumps for liquid whether or not fitted with a measuring device	$1,676,142	293,796
848190	Parts of taps, cocks, valves or similar appliances	$2,528,635	276,519
854449	Electric conductors, for a voltage not exceeding 80 V, nes	$1,800,336	257,219
847989	Machines & mechanical appliances nes having individual functions	$5,131,910	255,929
360200	Prepared explosives, o/t propellant powders	$350,908	218,324

HS6 Code	Description	Value (C$)	Weight (kg)
20322	Hams, shoulders and cuts thereof, of swine, bone in, frozen	$442,817	214,789

Figure 66: Top 25 Commodities Exported by Air from Alberta and Saskatchewan to Japan, 2006

HS6 Code	Description	Value (C$)	Weight (kg)
10190	Horses, asses, mules and hinnies, live, except pure-bred breeding	$15,223,294	2,016,585
20500	Horse, ass, mule or hinny meat, fresh, chilled or frozen	$9,946,260	983,946
854449	Electric conductors, for a voltage not exceeding 80 V, nes	$911,291	130,199
20319	Swine cuts, fresh or chilled, nes	$518,508	105,501
10110	Horses, asses, mules and hinnies, live, pure-bred breeding	$846,711	94,042
854459	Electric conductors, for a voltage >80V but not exceeding 1,000 V, nes	$426,686	92,046
842490	Pts of mech app (hand-op or not) for proj/disp or spray liq or powders	$855,062	91,378
151519	Linseed oil and its fractions, refined but not chemically modified	$81,890	61,319
870899	Motor vehicle parts nes	$236,986	60,284
20329	Swine cuts, frozen nes	$167,388	50,355
200410	Potatoes prepared or preserved other than by vinegar or acetic acid, frozen	$37,937	36,000
410150	Bovine/equine hides, whole, fresh or preserved, wt >16 kg	$27,434	27,429
902730	Spectrometers, spectrophotometers and spectrographs using optical radiations	$1,054,236	24,819
852032	Magnetic tape rec incorporating sound reproducing app, digital audio type	$185,940	24,466
391890	Floor, wall and ceiling coverings etc, of plastics nes	$83,461	24,097

HS6 Code	Description	Value (C$)	Weight (kg)
20130	Bovine cuts boneless, fresh or chilled	$166,280	20,965
750210	Nickel unwrought, not alloyed	$720,781	19,500
851790	Parts of electrical apparatus for line telephone or line telegraphy	$763,624	15,848
843149	Parts of cranes, work-trucks, shovels, and other construction machinery	$48,823	15,799
20322	Hams, shoulders and cuts thereof, of swine, bone in, frozen	$60,906	12,214
990100	Low value export transactions and confidential commodities	$52,085	12,002
401693	Gaskets, washers and other seals of vulcanised rubber	$108,605	9,600
851719	Line telephony electrical apparatus, nes	$459,763	9,277
901540	Photogrammetrical surveying instruments and appliances	$1,109,996	8,972
180690	Chocolate and other food preparations containing cocoa nes	$101,981	8,884

Figure 67: Top 25 Commodities Exported by Air from Alberta and Saskatchewan to Northern Europe, 2006

HS6 Code	Description	Value (C$)	Weight (kg)
20500	Horse, ass, mule or hinny meat, fresh, chilled or frozen	$14,891,933	2,581,933
940600	Prefabricated buildings	$3,196,486	1,231,337
300590	Dressings & similar articles,impreg or coated or packaged for med use, nes	$6,557,505	1,225,512
490700	Unused postage, revenue stamps; cheque forms, banknotes, bond certificates,etc	$9,634,637	1,111,771
843143	Parts of boring or sinking machinery, whether or not self-propelled	$14,456,574	1,019,981
981000	Contractors equip to be ret'd to Can or re-exp after completion of contract	$10,107,760	812,279

HS6 Code	Description	Value (C$)	Weight (kg)
901590	Parts and accessories for use with the apparatus of heading No 90.15	$31,123,337	763,454
847990	Parts of machines & mechanical appliances nes having individual functions	$11,314,344	644,589
848180	Taps, cocks, valves and similar appliances, nes	$8,859,094	580,087
980610	Settlers'/migrants' personal & household effects valued at $2000 Cdn or more	$3,170,651	532,689
841290	Parts of hydraulic & pneumatic & other power engines and motors nes	$7,779,729	502,663
870899	Motor vehicle parts nes	$1,661,728	422,709
732690	Articles, iron or steel, nes	$1,428,338	411,249
20130	Bovine cuts boneless, fresh or chilled	$3,850,416	398,920
840991	Parts for spark-ignition type engines nes	$1,826,079	359,959
853810	Boards, panels,etc for goods of heading 85.37, not equipped with their app	$3,983,274	343,271
730410	Pipes, line, iron or steel, smls, of a kind used for oil or gas pipelines	$452,752	299,497
841391	Parts of pumps for liquid whether or not fitted with a measuring device	$1,654,627	290,025
990100	Low value export transactions and confidential commodities	$1,241,773	288,642
848190	Parts of taps, cocks, valves or similar appliances	$2,506,341	274,081
847989	Machines & mechanical appliances nes having individual functions	$5,131,910	255,929
360200	Prepared explosives, o/t propellent powders	$350,908	218,324
902710	Gas or smoke analysis apparatus	$16,292,389	210,563
847439	Mixing or kneading machines nes for earth or other mineral substances etc	$2,326,205	205,441
20322	Hams, shoulders and cuts thereof, of swine, bone in, frozen	$381,911	202,575

7.5 Alberta and Saskatchewan Imports from Japan and Northern Europe

Figure 68: Total Imports by Air to Alberta and Saskatchewan from Japan and Northern Europe, 2006

Region	Value (C$)	Weight (kg)
Japan	$65,964,068	3,027,629
Northern Europe	$662,137,405	30,590,059
TOTAL	$728,101,473	33,617,688

7.5.1 Major Product Groups

Figure 69: Major Product Groups Imported by Air to Alberta and Saskatchewan from Japan and Northern Europe, 2006

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
84	Machinery	$192,150,380	13,056,261	26.4%	38.8%
90	Instruments	$163,775,756	6,003,987	22.5%	17.9%
85	Electrical Machinery	$115,933,388	4,887,769	15.9%	14.5%
39	Plastics and articles thereof	$9,082,856	1,461,659	1.2%	4.3%
73	Articles of iron or steel	$7,930,264	1,076,768	1.1%	3.2%
29	Organic Chemicals	$16,337,879	941,642	2.2%	2.8%
87	Vehicles and parts	$4,799,055	801,983	0.7%	2.4%
82	Tools	$21,898,290	569,244	3.0%	1.7%
88	Aerospace	$133,692,495	509,553	18.4%	1.5%
34	Soaps and waxes	$1,024,055	351,642	0.1%	1.0%
Other		$61,477,055	3,957,180	8.4%	11.8%
TOTAL		$728,101,473	33,617,688	100.0%	100.0%

Figure 70: Major Product Groups Imported by Air to Alberta and Saskatchewan from Japan, 2006

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
84	Machinery	$15,138,087	1,067,515	22.9%	35.3%
85	Electrical Machinery	$26,939,944	890,900	40.8%	29.4%
90	Instruments	$16,050,738	411,022	24.3%	13.6%
39	Plastics and articles thereof	$572,988	150,739	0.9%	5.0%
87	Vehicles and parts	$383,867	91,475	0.6%	3.0%
73	Articles of iron or steel	$411,955	83,306	0.6%	2.8%
68	Articles of stone, cement, plaster, etc.	$357,189	61,133	0.5%	2.0%
29	Organic Chemicals	$915,832	57,359	1.4%	1.9%
28	Inorganic Chemicals	$85,051	51,440	0.1%	1.7%
38	Misc chemical products	$1,362,344	23,593	2.1%	0.8%
Other		$3,746,073	139,147	5.7%	4.6%
TOTAL		$65,964,068	3,027,629	100.0%	100.0%

Figure 71: Major Product Groups Imported by Air to Alberta and Saskatchewan from Northern Europe, 2006

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
84	Machinery	$177,012,293	11,988,746	26.7%	39.2%
90	Instruments	$147,725,018	5,592,965	22.3%	18.3%
85	Electrical Machinery	$88,993,444	3,996,869	13.4%	13.1%
39	Plastics and articles thereof	$8,509,868	1,310,920	1.3%	4.3%
73	Articles of iron or steel	$7,518,309	993,462	1.1%	3.2%
29	Organic Chemicals	$15,422,047	884,283	2.3%	2.9%
87	Vehicles and parts	$4,415,188	710,508	0.7%	2.3%
82	Tools	$20,870,075	554,324	3.2%	1.8%

HS2 Code	Description	Value (C$)	Weight (kg)	Share	
				Value	Weight
88	Aerospace	$133,444,584	507,697	20.2%	1.7%
34	Soaps and waxes	$1,008,985	350,745	0.2%	1.1%
Other		$57,217,594	3,699,540	8.6%	12.1%
TOTAL		$662,137,405	30,590,059	100.0%	100.0%

7.5.2 Top Commodities

Note: nes = not elsewhere specified

Figure 72: Top 25 Commodities Imported by Air to Alberta and Saskatchewan from Japan and Northern Europe, 2006

HS6 Code	Description	Value (C$)	Weight (kg)
902680	Instruments & apparatus for measuring or check variables of liq or gases, nes	$14,083,696	2,682,540
843149	Parts of cranes, work-trucks, shovels, and other construction machinery	$7,440,584	2,407,759
841391	Parts of pumps for liquid whether or not fitted with a measuring device	$7,399,709	1,297,026
392690	Articles of plastics or of other materials of hds 39.01 to 39.14, nes	$7,634,790	1,222,946
843143	Parts of boring or sinking machinery, whether or not self-propelled	$16,861,064	1,189,633
901590	Parts and accessories for use with the apparatus of heading No 90.15	$34,055,971	835,393
293100	Organo-inorganic compounds, nes	$3,205,005	694,233
850490	Parts of electrical transformers, static converters and inductors	$2,155,126	559,356
850300	Parts of electric motors, generators, generating sets and rotary converters	$2,382,192	550,562
854381	Electrical machines and apparatus, proximity cards and tags	$1,238,416	535,976
852691	Radio navigational aid apparatus	$2,086,378	501,275

HS6 Code	Description	Value (C$)	Weight (kg)
820719	Rock drilling or earth boring tools with working o/t cermets, including parts	$12,737,198	468,262
841199	Parts of gas turbines nes	$35,310,402	463,164
732690	Articles, iron or steel, nes	$1,423,457	409,843
848310	Transmission shafts and cranks, including cam shafts and crank shafts	$766,667	386,053
902790	Microtomes; parts & access of inst and app for physical or chem analysis, nes	$5,337,263	376,564
841490	Parts of vacuum pumps, compressors, fans, blowers, hoods	$3,068,104	359,213
841290	Parts of hydraulic & pneumatic & other power engines and motors nes	$5,490,314	354,739
847989	Machines & mechanical appliances nes having individual functions	$4,016,040	351,884
841229	Hydraulic power engines & motors nes	$2,946,100	343,940
340213	Non-ionic surface active agents	$908,777	338,485
848180	Taps, cocks, valves and similar appliances, nes	$5,119,566	335,226
870899	Motor vehicle parts nes	$1,266,410	322,147
901580	Surveying, hydrographic, oceanographic, meteorological or geophysical inst nes	$18,795,733	321,103
903190	Parts and accessories for measuring or checking inst, appl and machines, nes	$7,246,538	318,022

Figure 73: Top 25 Commodities Imported by Air to Alberta and Saskatchewan from Japan, 2006

HS6 Code	Description	Value (C$)	Weight (kg)
843149	Parts of cranes, work-trucks, shovels, and other construction machinery	$1,214,669	393,065
851790	Parts of electrical apparatus for line telephone or line telegraphy	$8,211,615	170,424
901590	Parts and accessories for use with the apparatus of heading No 90.15	$6,044,170	148,264

HS6 Code	Description	Value (C$)	Weight (kg)
850520	Electro-magnetic couplings, clutches and brakes	$3,892,507	141,092
390720	Polyethers nes	$408,708	140,533
848340	Gears and gearing, ball/rolr screws, gear boxes, speed changers/torque cnvrtr	$1,412,072	102,349
902610	Instruments & apparatus for measuring or checking the flow or level of liquids	$122,132	82,202
870899	Motor vehicle parts nes	$286,799	72,955
854221	Monolithic integrated circuits, digital	$3,083,564	72,076
852691	Radio navigational aid apparatus	$134,233	69,009
854140	Photosensitive semiconductor devices, photovoltaic cells & light emit diodes	$365,409	66,202
681510	Non-electrical articles of graphite or other carbon	$351,342	60,889
853690	Electrical app for switching or protec elec circuits, not exceed 1,000 V, nes	$828,687	59,826
284020	Borates of metals nes	$84,461	51,388
848310	Transmission shafts and cranks, including cam shafts and crank shafts	$86,515	43,565
292090	Esters of inorganic acids, nes, their salts and their derivatives	$514,383	39,128
852313	Unrecorded magnetic tapes, of a width exceeding 6.5 mm	$518,314	35,887
853650	Electrical switches for a voltage not exceeding 1,000 volts, nes	$170,292	34,065
848180	Taps, cocks, valves and similar appliances, nes	$480,147	31,440
902680	Instruments & apparatus for measuring or check variables of liq or gases, nes	$327,802	30,504
731815	Bolts or screws nes, with or without their nuts or washers, iron or steel	$89,868	30,349
846693	Parts and accessories nes for use on machines of headings 84.56 to 84.61	$484,001	30,258
847130	Portable digital auto data process mach <=10 kg w CPU, keyboard,& display	$2,084,087	29,764
732690	Articles, iron or steel, nes	$99,338	28,601

HS6 Code	Description	Value (C$)	Weight (kg)
901580	Surveying, hydrographic, oceanographic, meteorological or geophysical inst nes	$1,476,796	26,926

Figure 74: Top 25 Commodities Imported by Air to Alberta and Saskatchewan from Northern Europe, 2006

HS6 Code	Description	Value (C$)	Weight (kg)
902680	Instruments & apparatus for measuring or check variables of liq or gases, nes	$13,755,894	2,652,036
843149	Parts of cranes, work-trucks, shovels, and other construction machinery	$6,225,915	2,014,694
841391	Parts of pumps for liquid whether or not fitted with a measuring device	$7,320,712	1,283,179
392690	Articles of plastics or of other materials of hds 39.01 to 39.14, nes	$7,608,746	1,218,334
843143	Parts of boring or sinking machinery, whether or not self-propelled	$16,599,523	1,171,180
293100	Organo-inorganic compounds, nes	$3,203,866	694,201
901590	Parts and accessories for use with the apparatus of heading No 90.15	$28,011,801	687,129
850490	Parts of electrical transformers, static converters and inductors	$2,087,226	541,733
850300	Parts of electric motors, generators, generating sets and rotary converters	$2,323,603	537,021
854381	Electrical machines and apparatus, proximity cards and tags	$1,238,416	535,976
820719	Rock drilling or earth boring tools with working o/t cermets, including parts	$12,732,696	468,261
841199	Parts of gas turbines nes	$35,251,969	462,398
852691	Radio navigational aid apparatus	$1,952,145	432,266
732690	Articles, iron or steel, nes	$1,324,119	381,242
902790	Microtomes; parts & access of inst and app for	$4,759,203	362,496

HS6 Code	Description	Value (C$)	Weight (kg)
	physical or chem analysis, nes		
847989	Machines & mechanical appliances nes having individual functions	$3,991,317	349,552
841290	Parts of hydraulic & pneumatic & other power engines and motors nes	$5,399,689	348,884
848310	Transmission shafts and cranks, including cam shafts and crank shafts	$680,152	342,488
841490	Parts of vacuum pumps, compressors, fans, blowers, hoods	$2,899,945	339,525
340213	Non-ionic surface active agents	$908,777	338,485
841229	Hydraulic power engines & motors nes	$2,832,197	333,500
903190	Parts and accessories for measuring or checking inst, appl and machines, nes	$7,219,358	316,829
848180	Taps, cocks, valves and similar appliances, nes	$4,639,419	303,786
841410	Vacuum pumps	$457,399	297,353
901580	Surveying, hydrographic, oceanographic, meteorological or geophysical inst nes	$17,318,937	294,177

7.6 Cargo Industry Interviews

7.6.1 Freight Forwarders Interviews

As previously outlined, Canadian trade data available from Statistics Canada provides port-of-exit and province-of-origin for goods leaving the country as well as mode of transport used to leave the country. Thus NWT air exports can be determined, regardless of whether the goods left the NWT directly by air or were trucked to Calgary or Vancouver and shipped by air from there. On the other hand, the same data for imports records port of entry, but not province/territory of destination. Thus in order to get a handle on the types of goods and the approximate volume of goods destined to the NWT, it is necessary to conduct interviews with freight forwarders involved in handling northern shipments.

Freight forwarders are typically very protective of information regarding customers and cargo. It is a very competitive business, and information is one of the prime "currencies" they trade in. Nevertheless, they will often share insights into total volumes, which will give a fuller picture of the macro air cargo opportunities for Yellowknife. Section 7.6.1.1 provides insight on the types and volume of goods destined to the NWT.

Interviews were also used as an opportunity to gauge the view of these freight forwarders on the potential for Yellowknife to serve as a transhipment point and the resulting infrastructure investments that might be necessary to realize this potential. Section 7.6.1.2 summarises the feedback from freight forwarders on the potential for Yellowknife to handle transhipment activity.

7.6.1.1 Goods Destined to the NWT

A total of 13 forwarders were identified as the primary forwarding companies that handle northern shipments to the NWT. Of these forwarders, cargo volume estimates were obtained for six forwarders through interviews conducted with senior level officials of these companies. It is estimated that these six forwarders handle a total of 113 million pounds or 51,400 tonnes of cargo goods destined to the NWT per year. It is recognized that the total cargo volume from these interviews do not represent total inbound cargo for the NWT. However, estimations on cargo volumes were obtained for two out of three of the largest forwarding companies to the NWT, as indicated by industry sources. Therefore, the aggregate cargo volume determined through the interviews is likely to represent 50% or more of total cargo volume destined to the NWT. An overall estimate of 200 million pounds of inbound cargo would be a reasonable benchmark. This compares to 40 million pounds of outbound international goods per year (excluding pipelines).

The majority of the interviews indicated that goods flowing into the NWT are transhipped through Edmonton. Depending on the time sensitivity of the shipments, the cargo may be transported to the NWT by ground or by air (forwarders were unwilling to give detailed commodity breakdowns). Many of the forwarding companies primarily handle goods that are required by the oil and mining industry, ranging from mining equipment to the goods consumed by mine workers. Some of the specific types of industrial goods mentioned in the interviews include cement, machinery for trucks and plants, soil and rock samples, and cat-engines. Only a portion of this is generally air compatible. Other types of goods shipped to the NWT communities and to mine workers include groceries, liquor, electronics, furniture, and Canada Post mail and packages. Two of these forwarders indicated that with the current ice bridge issues, they have been handling higher volumes of air freight than usual; in particular, there have been substantial increases in the amount of small freight packages and perishable items handled.

7.6.1.2 Yellowknife Transhipment Potential

Out of the 13 forwarding companies identified for handling northern shipments, five companies provided feedback on the potential for Yellowknife to serve as a transhipment point and two companies indicated that they were not in the position to provide a response. The non-responding forwarders reasoned that the potential for transhipment activity at Yellowknife is not applicable to them, as their operations involve domestic service only.

Of the five responding companies, three forwarders indicated that it is unlikely for Yellowknife to serve as a transhipment point, while two forwarders suggested that Yellowknife does have the potential, but that significant changes would be needed for the opportunity to be realized.

Of the forwarders that saw potential in Yellowknife to serve as a transhipment point, one of the companies initially indicated that they were not interested in transhipment activity at Yellowknife due to high costs and a lack of available space. However, it was later explained that their interest

level would definitely change if Yellowknife were to grow into a major hub and costs would fall as a result of the increased traffic. Essentially, the forwarder's main concern was the high costs associated with using Yellowknife as a hub. The forwarder contact also indicated that it would be critical to improve and better maintain the current road system for the purposes of ground shipment, as well as to improve the medical system in the NWT to increase the demand for medical supplies into the region.

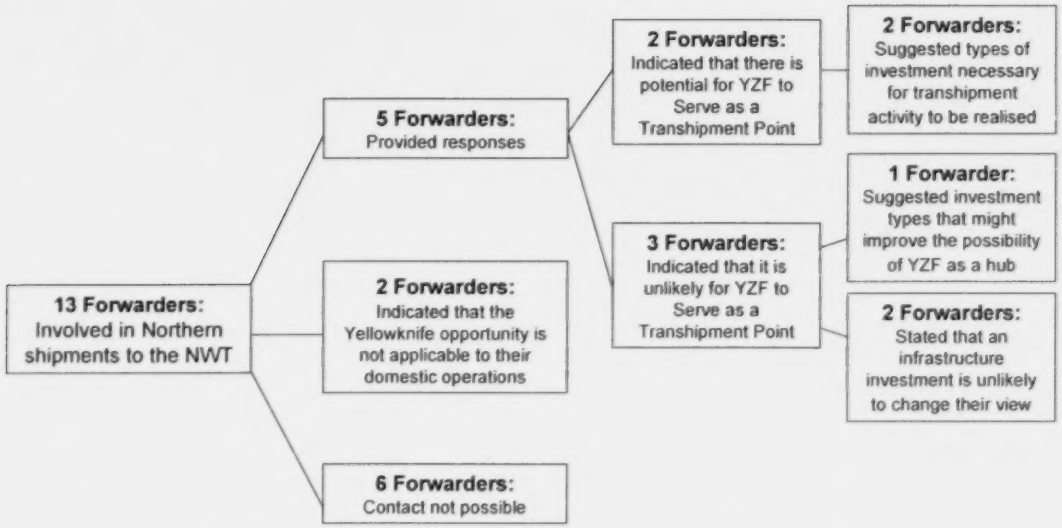
The second forwarder that expressed interest in the Yellowknife transhipment opportunities suggested that it would take a tremendous effort for this opportunity to be realized and that the NWT would undoubtedly face many challenges. Space was identified as a major issue as it is difficult for companies to acquire land for expansion purposes, unlike in the case of Hay River where land is readily available. In addition, the geographic location of Yellowknife, being "at the end of the road," makes it more costly for goods to be transported by truck. Even if costs were lowered as a result of traffic increases, there would be a lack of human resources, primarily driven away by the high wages offered in other industries in the NWT. In order for transhipment activity at Yellowknife to be realized, the contact person suggested that the Government of the NWT would need to fix the current space issue by guaranteeing sufficient land for companies to develop for future expansion plans, as well as guaranteeing the demand of good shipments to the NWT. Also emphasized was the need to improve the road infrastructure, both for maintenance and expansion purposes. It was further commented that the current road system is too centralized and needs to be expanded to link other communities in the NWT to Yellowknife. The situation would be much more ideal if further development took place in areas surrounding the existing road network.

For those forwarders that indicated that it would be unlikely for Yellowknife to serve as a transhipment point, the primary reason provided was the geographic disadvantage of Yellowknife compared to other potential hubs. One of the forwarders argued that Anchorage serves sufficiently as a major air transhipment point despite its remoteness, primarily for historical reasons that have allowed it to develop into a hub over time. As ground services play an important role in most transhipment operations, Yellowknife is disadvantaged as not only are there no advantages associated with travelling up north, this equates to increased fuel costs from transporting over longer distances for trucking companies. Another forwarder explained that with the current trucking network already in place at Edmonton and with Edmonton offering lower costs than Yellowknife, there would be no reason to switch to using Yellowknife as a transhipment point, especially with Yellowknife being "at the end of the road." For Yellowknife, attracting transhipment activity would be a challenge since there is no compelling reason for it to occur at that location.

When asked about the types of investments that would improve the possibility of using Yellowknife for transhipment activity, one of the disinterested forwarders indicated that if a bridge was built over the Mackenzie River and trucks operated 24 hours per day, then the resulting savings from fuel might make it feasible to use Yellowknife as a transhipment point. However, there is uncertainty that the associated savings would be beneficial enough for this possibility to be realised. It was further indicated that expanding the runway size at Yellowknife Airport would be absolutely necessary to accommodate any transhipment activity. The other two forwarders stated that it is unlikely that an infrastructure investment would change their view on Yellowknife's potential to serve as a transhipment hub. One of these forwarders suggested areas of improvement that would be necessary for increasing traffic into Yellowknife in general, such as expanding the availability of industrial land to attract more businesses into the region and the lowering of airport landing fees.

Figure 75 summarises the response types received among the 13 forwarders that handle northern shipments to the NWT.

Figure 75: Summary of Forwarder Responses


13 Forwarders:
Involved in Northern shipments to the NWT
5 Forwarders:
Provided responses
2 Forwarders:
Indicated that the Yellowknife opportunity is not applicable to their domestic operations
6 Forwarders:
Contact not possible
2 Forwarders:
Indicated that there is potential for YZF to Serve as a Transhipment Point
3 Forwarders:
Indicated that it is unlikely for YZF to Serve as a Transhipment Point
2 Forwarders:
Suggested types of investment necessary for transhipment activity to be realised
1 Forwarder:
Suggested investment types that might improve the possibility of YZF as a hub
2 Forwarders:
Stated that an infrastructure investment is unlikely to change their view

7.6.2 Integrators

The objective of establishing contact with major integrated carriers was to assess the longer term potential for integrator or postal transhipment activity taking place in Yellowknife, and the resulting infrastructure investments that might be necessary to realize this potential. As part of the interview, integrators were asked about the potential and level of interest in using Yellowknife as a transhipment point. Upon expressing interest in Yellowknife opportunities, the carrier would also be asked about the type of investments necessary at Yellowknife for this activity to be realized.

FedEx Express

Based on an interview conducted with a senior level official at FedEx Express, it appears that the use of Yellowknife as a transhipment point would be unlikely, primarily due to the geographic location of Yellowknife.

According to the contact, Yellowknife has a geographic disadvantage compared to hubs such as Anchorage or Calgary. Anchorage works well as a transhipment point because it has, over a period of time, established a strong hub-and-spoke system that is capital-intensive. In effect, it serves as a transhipment hub because it is a transhipment hub. Trying to replicate what it has achieved would be difficult, particularly at another point so distant from the key markets.

Calgary also serves appropriately as a transhipment point because of its central location closer to the final market. From Calgary, feed can be accomplished by smaller aircraft. Essentially, Calgary is more effective for a starburst operation. Yellowknife's distance from market makes it reliant on

larger, longer-range aircraft to provide feed, which would diminish its effectiveness for starburst operations. Trucking is also an option out of Calgary, which would diminish distribution costs.

Calgary has another key advantage in that it is a strong consumer of inbound goods. This improves the efficiency of hubbing, and is an added attraction that the NWT cannot provide. The NWT simply does not have the population density to make it a good inbound consumer market.

It was further expressed that even if it had the capital required to sustain itself as a hub, an investment in physical infrastructure at Yellowknife is unlikely to improve its ability to serve as a transhipment point. This is because the main problem with Yellowknife is its geographic location.

Canada Post

We have to date been unable to make contact with any senior Canada Post officials. Lower level staff refused to provide direct contact information for senior level officials. Efforts continue to make the appropriate contact.

Purolator

According to a senior level official at Purolator, it is probably unlikely for Yellowknife to develop as a major transhipment point due to labour issues, in part related to the current boom in the mining and oil industry.

The contact person expressed that the transportation sector in the Northwest Territories is currently experiencing tremendous pressure on labour and wages due to the impact of the booming mining and oil industries. The high wages offered by these highly competitive industries has resulted in high turnover rates for workers in the transportation industry. In fact, it was indicated that it is uncommon for senior level personnel to stay on a job for more than six months within the industry. These labour issues would make it a challenge for Yellowknife to serve as a major transhipment point.

When asked about investments that would improve the possibility of using Yellowknife for transhipment activity, the contact expressed that it would take a tremendous effort to attract sufficient labour into the area to support a distribution operation. He felt that it likely would be hard to justify significant investment, and that lowering costs such as landing fees and rent would be unlikely to make the airport sufficiently attractive.

UPS

There has not been any success to date in establishing contact with senior level officials at UPS.

DHL Express Canada

According to a senior level official at DHL Express Canada, the idea of Yellowknife as a major transhipment hub is not foreseen as a "blooming possibility" for the future. For DHL Express, it would be "great to footprint everywhere, but sometimes it is not possible."

The reasoning is primarily due to the lack of volume of goods destined to the NWT and the costs associated with feeding the volume. The contact person gave the example that it does not even have a truckload of goods going to the Northwest Territories on a day-to-day basis; establishing it as a base is not justifiable. Moreover, the geographic location of Yellowknife makes it costly to feed new traffic to the region using the existing carriers (DHL contracts out services in Canada). Therefore, it would be extremely unlikely for Yellowknife to be able to stimulate enough traffic to make it attractive for integrated carriers to engage in transhipment activity.

The contact person further indicated that there are no areas of improvement or investment that would change its opinion on Yellowknife as a transhipment point. DHL is currently focused on increasing transborder traffic. Thus, there is potential to increase regular traffic via Edmonton and other cities surrounding the USA border.

7.6.3 Yellowknife As a Cargo Transhipment Hub

Currently, Yellowknife is an intermodal transhipment centre with tracking of cargo ostensibly from Alberta transferred onto various airlines for flights to the mining and exploration centres north of

Yellowknife. The majority of the cargo flow is going North with very little cargo traveling in the opposite direction South.

This transhipment role accounts for most of the 32,000 tonnes of air cargo moving through the Yellowknife airport.

An airline to airline transhipment centre is a different matter. This concept requires two main ingredients:

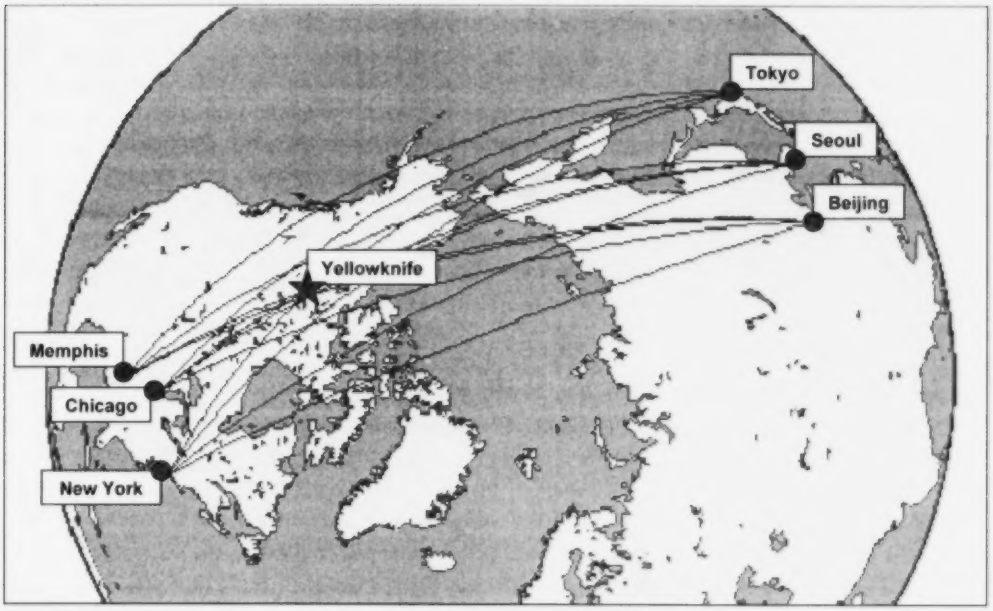
1. To be on the direct flight path between major cities in the USA/Canada and Asia.
2. To be in the ideal geographically located point where aircraft need refuelling in order to maximize their flight load.

These are the two main ingredients that have allowed Anchorage to become a major cargo transhipment point between the USA and Asia. Anchorage development had a lot to do with its location being at that point in North American where aircraft at the time, to or from Asia, would need to refuel in order to maximize their payload. Flights had the range to go beyond Anchorage to further points inland from Anchorage but take a severe payload penalty in order to do so. With numerous aircraft using Anchorage as a staging point there became a natural opportunity to transfer cargo from one flight to another to top up loads on all flights. This soon became an opportunity that many carriers took advantage of which has resulted in Anchorage reaching critical mass in terms of all the cargo transfer opportunities available to carriers. Now, even with advanced aircraft technology allowing aircraft to fly longer range without payload penalty, the economies of Anchorage as a transhipment hub are still there. Attaining this critical mass took time but because of it, Anchorage enjoys a volume of some 2,825,000 annual tones of air cargo flowing through its facility.

Numerous airports in Northwest Canada would like to duplicate the Anchorage success story but have the following obstacles to do it:

1. Aircraft now have longer range capability and can overly Anchorage without penalty.
2. More importantly, Anchorage is there and there are so many connection flight options that airlines can maximize their flight loads. For instance, an aircraft landing at Anchorage from the USA can transfer cargo to non-stop services to:
    - Tokyo
    - Seoul
    - Hong Kong
    - Beijing

Yellowknife has the first basic ingredient being on the direct flight path between the USA and Asia as can be seen in the following diagram:



Route	Distance (miles)		Difference	
	Direct	Via Yellowknife	Miles	%
Tokyo				
New York	6,745	6,761	16	0.2%
Chicago	6,274	6,296	22	0.4%
Memphis	6,582	6,684	102	1.5%
Seoul				
New York	6,906	7,017	111	1.6%
Chicago	6,551	6,552	1	0.0%
Memphis	6,923	6,939	16	0.2%
Beijing				
New York	6,837	7,071	234	3.4%
Chicago	6,579	6,606	27	0.4%
Memphis	6,993	6,993	0	0.0%

However, Yellowknife's location for the economics of maximizing aircraft payload is not ideal. Those older aircraft that find Anchorage as the ideal location to maximize their North Pacific flight payload would experience considerable payload penalty in flying the extra distance of 1,153 miles between Anchorage and Yellowknife. Newer technology aircraft with much longer range can simply overfly Yellowknife between Asia and the USA city.

The third factor in a cargo transhipment is an airline or combination of airlines that wish to fly to several points in Asia, linking to several points in the USA. This is a major undertaking and in

these days of high fuel cost, no airline is prepared to take that risk of such a large scale undertaking.

8.0 Recommendations

To be in the game of developing new air services, particularly with the competition aggressively going after airlines for new flights, it is very important that the NWT pursue an air service development program that systematically goes through the list of new route priorities and targeted airlines. Sound business cases presented to the airlines with some incentives also included to encourage the decision for the new routes.

A Yellowknife air service development strategy should include the following routes and airlines:

1. Domestic
   - Year round Vancouver - Yellowknife service by existing or new carrier
   - Year round Toronto - Yellowknife by existing or new carrier on a stand-alone basis or in combination with Fort McMurray
2. International
   - Summer charter service between Frankfurt and Yellowknife by Condor, LTU or Air Transat, in combination on the return flight to Europe with a stop in Edmonton
   - Winter charter services between Tokyo and Yellowknife by Japan Airlines, in combination with Edmonton or Calgary as partners, for a stop on the return flight to Japan
3. USA (Transborder)
   - Seasonal summer service between Yellowknife and Denver or Salt Lake City by United Airlines or Delta Air Lines respectively

Airline stakeholders have advised that additional Alberta-Yellowknife air services by an airline not now serving Yellowknife would have a detrimental impact on their business and cause them to reassess their operations on this route. While any properly certified and licensed airline is totally free to initiate such services, the recommended air service development strategy does not include such added Alberta-Yellowknife services as a priority because the market, at this time, appears to be well served.

Yellowknife as a transhipment hub has one of the key ingredients to make this work, namely being in the direct flight path between major U.S. and Asia cities. However, it lacks other key ingredients and since any such transhipment centre would require major financial investment in a time frame when airline financial returns are not good, it is recommended that this concept not be pursued at this time.

Appendix 1: List of Stakeholder Groups That Were Interviewed

Organization	Invited Date/By	Time of Meeting	Location of Meeting	Name and Title Representatives of Attendees	Status of Meeting Contact Number
Client - Government of the Northwest Territories (GNWT)					
Industry Tourism and Investment (ITI)	11/01/08 IRE	15:00 14/01/08 15:30 16/01/08	4th Floor Board Room Scotia	Dan Westman, Manager Economic Planning and Analysis	873.7394 attended
Industry Tourism and Investment (ITI)	11/01/08 GNWT	15:00 14/01/08	4th Floor Board Room Scotia	Gary Singer, Director Economic Planning and Analysis	873.7361 attended
Industry Tourism and Investment (ITI)	11/01/08 GNWT	15:00 14/01/08 15:30 16/01/08	4th Floor Board Room Scotia	Kira Pena, Economic Researcher, Investment and Economic Analysis	920.6328 attended
Industry Tourism and Investment (ITI)	11/01/08 GNWT	14:00 15/01/01	4th Floor Board Room Scotia	Richard Zieba, Director Tourism and Parks	873.7902 attended
Transportation	11/01/08 GNWT	15:00 14/01/08	4th Floor Board Room Scotia	Bill Morrison, Manager, Technical Services Airports Division	920.6931 attended
Transportation	11/01/08 GNWT	15:00 14/01/08	4th Floor Board Room Scotia	Darren Locke, Transportation Planner Planning and Policy	873.7663 attended
Transportation	11/01/08 IRE	10:00 16/01/08	4th Floor Board Room Scotia	Steve Loutitt Yellowknife Airport Manager	873.4680 attended
Municipal and Community Affairs	11/01/08 GNWT	15:00 14/01/08	4th Floor Board Room Scotia	Murray Cutten, Manager Resource Development Impacts	873.7977 attended
Industry Organizations					
Northern Air Transport Association +*	11/01/08 IRE	07:00 14/01/08	Explorer Hotel Breakfast	Teri Archuk, Director Paul Laserich, Director	669.8200 attended
NWT Tourism Association +*	09/01/08 GNWT	14:00 15/01/01	Scotia Centre Board Room	Robin Wotherspoon, President David Grindlay, General Manager Ron Ostrom	873.5007.225 attended
NWT Aboriginal Business Association*+	11/01/08 IRE			Darrel Beaulieu, President	Invitation extended
NWT Chamber of Commerce+	09/01/08 GNWT	9:00 25/01/08		Don Yamkowy, President	920.9505 Attended

	& IRE				
NWT Hotel Association	09/01/08 GNWT	14:00 03/02/08	Scotia Centre Board Room	Jenni Legge	873.9700 Attended subsequent interview
NWT Chamber of Mines+	14/01/08 IRE	17:00 14/01/08	Scotia Centre Offices	Mike Vaydik, General Manager	873.5281 attended
Northern Frontier Regional Visitors Association*+	14/01/08 IRE	14:00 15/01/08	Scotia Centre Board Room	Dennie Olmstead, Executive Director	873.4262 attended
Yellowknife Chamber of Commerce	11/01/08 IRE	12:00 15/01/08	Le Frolic Lunch	Jim Eirikson, President	445.3955 (c) 920.4944 attended
Outfitters Association.	15/01/08 NWTTA	10:00 16/01/08	YKCC Board Room	Boyd Warner, President	873.2413 attended
Major Scheduled Airlines, Fixed Wind and Rotary Charters					
Air Tindi *	11/01/08 IRE	07:00 14/01/08	Explorer Hotel Breakfast	Teri Arychuk, VP Operations	669.8200 attended
Adlair Aviation Ltd.+*	11/01/08 IRE	07:00 14/01/08	Explorer Hotel Breakfast	Paul Laserich, President	873.5161 attended
Arctic Sun West	14/01/08 IRE	1200 16/0108	Diamontes Lunch	Tim Zehr, President, President Tom Pilgram, General Manager	873.6271 attended
Buffalo Airways Ltd.*+	11/01/08 YKCC	08:30 15/01/08	YKCC Board Room	Mike Handley, Operations Manager	873.6112 attended
Canadian North*+	11/01/08 YKCC	17:30 15/01/08	Explorer Hotel	Tracy Medve, President Kellie Kaylo, Director of Marketing	669.7004 attended
First Air*+	11/01/08 YKCC	10:00 15/01/08	YKCC Board Room	Mike Olson, Director of Sales Western Canada Matt Mossman, Director of Cargo	669.6683 attended
Great Slave +Helicopters+	14/01/08 IRE	8:00 16/01/08	Explorer Breakfast	Chuck Parker, Executive Vice President	695.2326 attended
Jazz/Air Canada	11/01/08 YKCC			Media Relations Air Canada	E-mailed and visited office
Expeditors					
BBE Expediting*+	11/01/08 YKCC	9:15 15/01/08	YKCC Board Room	Gary Reid, President	766.86676 attended
Discovery Mining Services	11/01/08 YKCC	8:00 16/01/08	Explorer Breakfast	Chuck Parker Rob Carrol	695.2326 attended
G & G Expediting	11/01/08 YKCC	11:30 15/0108	Speaker Phone Interview	Gary	669.9705 attended
Couriers					
Buffalo Air Express+*	11/01/08 YKCC	08:30 15/01/08	YKCC Board Room	Mike Handley, Operations Manager	873.6112 attended

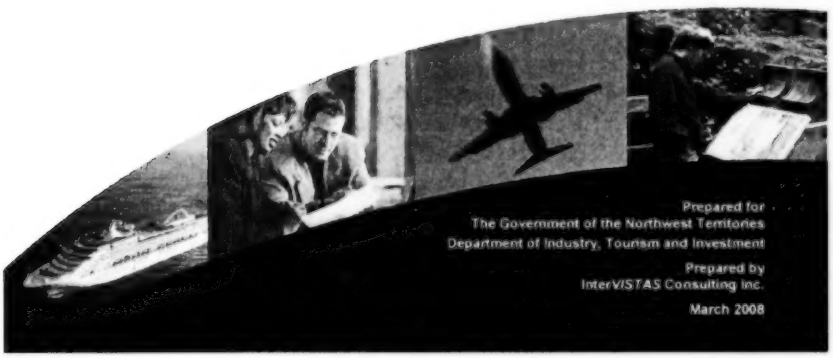
Intermodal Transportation Companies, Travel Agents, Other					
Discovery Air	14/01/08 IRE	8:00 16/01/08	Explorer Breakfast	Chuck Parker	695.2326 attended
RTL - Robertson Enterprises Ltd.+	14/01/08 IRE	1200 16/01/08	Diamontes Lunch	Tim Zehr, President Tom Pilgram	873.6271 attended
Matco Transportation+	14/01/08 IRE		Phone Interview	Ray Anderson, President	873-333 attended
Top of the World*+	14/01/08 IRE	1400 16/01/08	Their Offices	Susan Mercriedi, Managing Partner	669.6016 attended
Key West*+				Participated through NWT Chamber of Commerce	
City of Yellowknife	14/01/08 IRE	18:45 15/01/08	Bullocks Dinner	Mayor Van Tigham and Carol	920.5600
City of Yellowknife	03/02/08	16:00 03/02/08	City Offices	Peter Neugebauer Director of Business Development	920-5600 attended
Member of Parliament	16/01/08 GNWT	10:30 16/01/01	Scotia Centre Board Room	Denis Bevington	attended
Tour Operators - Aurora Tours, Eco-Adventure Tours - Outfitters					
Aurora Village*	09/01/08 GNWT	14:00 15/01/01	Scotia Centre Board Room	Donny Morin	669.0006 attended
Aurora World Corporation*	09/01/08 GNWT	10:30 16/01/01	Scotia Centre Board Room	Chris Johnson, General Manger Darrel Bonnett Chairman Métis Development Corporation Alex Arychuk, Director	873.4776 attended

*Aboriginal Ownership or Aboriginal Executive Members of the Board

+Offices and/or Executive Members of the Board residing outside of Yellowknife in the NWT

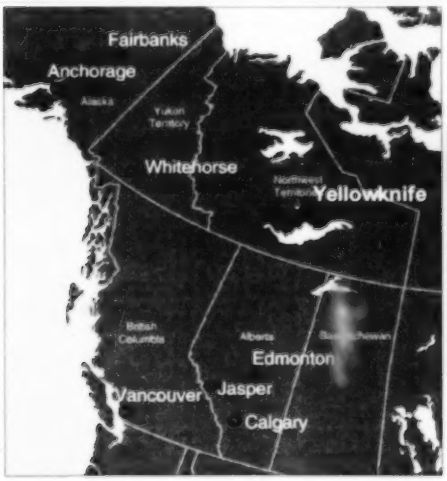
Appendix 2: Business Cases for Airlines

Canada's Northwest Territories (NWT) Air Service Opportunity



Northwest Territories Profile

Location



- NWT is located in North Western Canada

City	Distance to Yellowknife (km)
Edmonton	1,021
Jasper	1,076
Calgary	1,264
Vancouver	1,572
Whitehorse	1,108
Anchorage	1,856
Fairbanks	1,657

1

Northwest Territories Profile
Location

- Yellowknife is the capital of the NWT

- It is 4,100 air miles west of Frankfurt

2

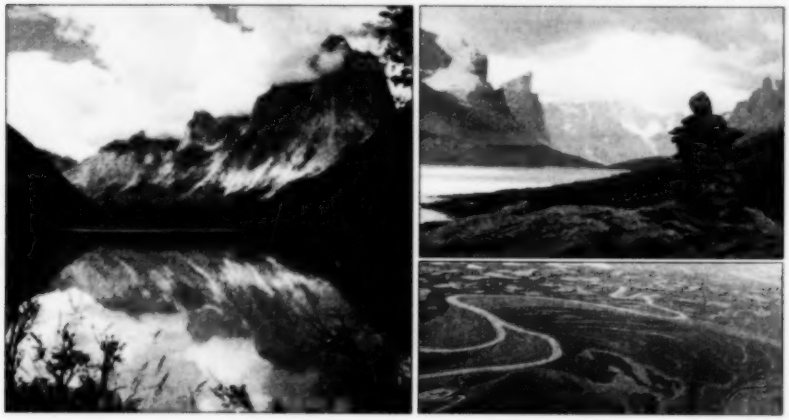
Northwest Territories Profile
Demographics and Economy

- The Northwest Territories has a population of 42,000 people
- The territory enjoys vast geological resources including diamonds, gold, and natural gas
- Yellowknife is known as the "Diamond Capital of North America"

3

Northwest Territories Profile
Tourism

- The NWT is 1,346,000 km^2 of natural untainted wilderness



4

Northwest Territories Profile
Tourism

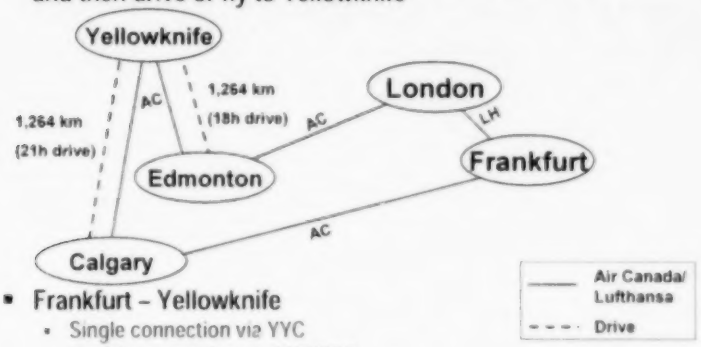
- Winter attractions include; Northern Lights, (aurora borealis) viewing, dogsledding, snowmobiling, and wildlife viewing

- Average temperature in the winter is -25 °C

6

Air Travel
Current Services

- Currently German travellers must fly to Calgary or Edmonton and then drive or fly to Yellowknife



- Frankfurt – Yellowknife
  - Single connection via YYC
  - Double connection via LHR/YEG
- Local YYC/YEG-YZF air services are also available on First Air and Canadian North

7

Air Travel
Market Sizes

- In 2006 approximately 3,400 German travellers visited the Northwest Territories or 6,800 one-way passengers
- The majority of German travellers currently fly to either Calgary or Edmonton and then drive to the NWT
- In 2006 approximately 30,000 German visitors travelled to Northern North America (NWT, Yukon and Alaska)

8

Air Travel
Air Service Opportunity

- A new air service from Germany to Yellowknife would capture a significant portion of the current market
- It would also stimulate additional demand by attracting new travellers to the NWT
- There are many service options available
  - A new Germany-Yellowknife charter service could involve a double drop with either Calgary, Edmonton, Whitehorse or Alaska
  - The new service could operate all year round or only in peak seasons

9

Next Steps

- If there is interest more information can be provided
- Risk sharing incentives can also be considered
- The NWT is prepared to meet to discuss this opportunity
- Please advise your interest

10

Contact

Martin Copeland
Senior Vice President, Aviation
InterVISTAS Consulting Inc.

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1200 West 73rd Ave
Vancouver, British Columbia
Canada V6P 6G5
Tel: 00-1-604-717-1866
Fax: 00-1-717-1818
martin_copeland@intervistas.com

11

Thank You

www.intervistas.com

Canada's Northwest Territories (NWT) Air Service Opportunity

Northwest Territories Profile
Location

- NWT is located in North Western Canada

City	Distance to Yellowknife (km)
Edmonton	1,021
Jasper	1,076
Calgary	1,264
Vancouver	1,572
Whitehorse	1,108
Anchorage	1,856
Fairbanks	1,657

1

Northwest Territories Profile
Location

- Yellowknife is the capital of the NWT

- It is 4,500 air miles east of Tokyo

2

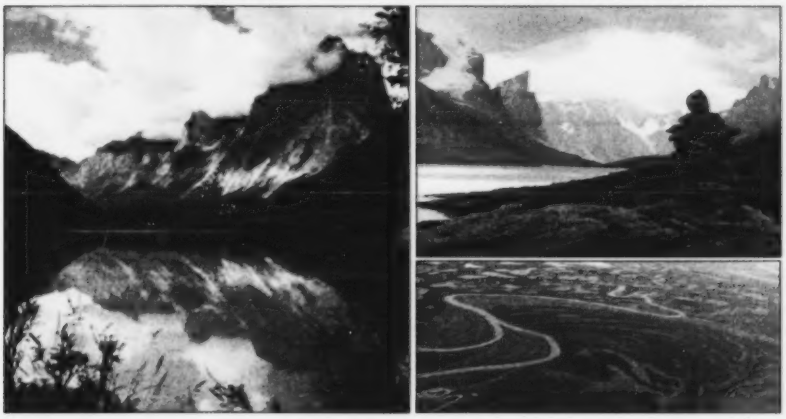
Northwest Territories Profile
Demographics and Economy

- The Northwest Territories has a population of 42,000 people
- The territory enjoys vast geological resources including diamonds, gold, and natural gas
- Yellowknife is known as the "Diamond Capital of North America"

3

Northwest Territories Profile
Tourism

- The NWT is 1,346,000 km^2 of natural untainted wilderness



4

Northwest Territories Profile
Tourism

- Summer attractions include; hiking, hunting, canoeing, kayaking, and recreational vehicle (RV) road trips

- Average temperature in the summer is 15 °C

5

Northwest Territories Profile
Tourism

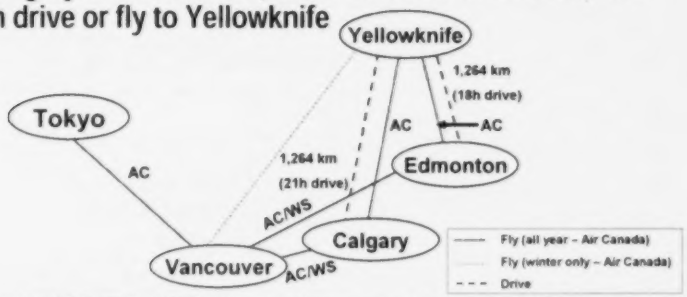
- Winter attractions include; Northern Lights, (aurora borealis) viewing, dogsledding, snowmobiling, and wildlife viewing

- Average temperature in the winter is -25 °C

6

Air Travel
Current Services

- Currently Japanese travellers must fly to Vancouver then to Calgary or Edmonton (outside the winter season) and then drive or fly to Yellowknife



- Local YYC/YEG-YZF air services are also available on First Air and Canadian North

Note: In Winter 2007 Air Canada offered a daily nonstop flight between Vancouver and Yellowknife but it is unknown if this service will be continued in 2008

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Air Travel
Market Sizes

- In 2007 approximately 7,700 Japanese visitors travelled by air to Yellowknife or 15,4000 one-way passengers.

Market	Annual Passengers
Tokyo	4,437
Osaka	2,277
Nagoya	621
Other	358
Total	**7,692**

8

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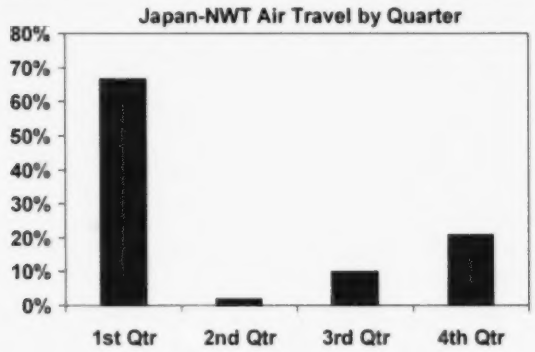
8

Air Travel
Seasonality

- The majority of Japanese travellers visited the NWT in the winter months to see the Northern Lights (Aurora Borealis)



9

Air Travel
Air Service Opportunity

- A new air service from Japan to Yellowknife would capture a significant portion of the current market
- It would also stimulate additional demand by attracting new travellers to the NWT
- Several new direct service options are possible
  - A new Japan-Yellowknife charter service could involve a double drop with either Calgary, Edmonton or Alaska
  - The new service could operate all year round or only in peak seasons

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Next Steps

- If there is interest more information can be provided
- Risk sharing incentives can also be considered
- The NWT is prepared to meet to discuss this opportunity
- Please advise your interest

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Thank You

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Appendix 3: Stakeholder Views Regarding a Yellowknife Runway Extension

Almost all of the stakeholders made a point that they did not favour a lengthening of the runway. However, many wanted to see more space at Yellowknife Airport for companies servicing the mining industry, more room for aircraft on the taxi ways and aprons, elimination of the de-icing bottle neck at YZF and additional funding of airport upgrading allocated to the small airports throughout the NWT that are at the other end of a route from Yellowknife Airport rather than on a runway extension.

A number of participants volunteered that they did not want to be shouldered with the extra layer and costs of an airport authority. This input was not sought, however it was offered by the stakeholder in the discussions. However, some stakeholders such as the Fort Simpson Chamber of Commerce felt that a runway extension would encourage added Yellowknife German tourism.